

PART A
IONOSPHERIC DATA

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IONOSPHERIC DATA

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SYMBOLS, TERMINOLOGY, CONVENTIONS

Beginning with data reported for January 1952, and continuing through December 1956, the symbols, terminology, and conventions for the determination of median values used in this report (CRPL-F series) conform as far as practicable to those adopted at the Sixth Meeting of the International Radio Consultative Committee (C.C.I.R.) in Geneva, 1951. Excerpts concerning symbols and terminology from Document No. 626-E of this Meeting are given on pages 2-7 of the report CRPL-F89, "Ionospheric Data," issued January 1952. Reprints of these pages are available upon request.

Beginning with data for January 1957, the symbols used are given in NBS Report 5033, "Summary of Changes in Ionospheric Vertical Soundings, Observing and Scaling Procedures - Effective 1 January 1957," which draws upon the First Report of the Special Committee on World-Wide Ionospheric Soundings (URSI/AGI), Brussels, Sept. 2, 1956. A list of these symbols is available upon request.

In the Second Report of the Special Committee on World-Wide Ionospheric Soundings of the URSI/AGI Committee, May 1957, a new descriptive letter was introduced:

- M Measurement questionable because the ordinary and extraordinary components are not distinguishable.

There was an expansion in meaning of the following:

- Z (1) (qualifying letter) Measurement deduced from the third magnetoionic component.
(2) (descriptive letter) Third magnetoionic component present.

Beginning with data for January 1945, median values are published wherever possible. Where averages are reported, they are, at any hour, the average for all the days during the month for which numerical data exist.

The following conventions are used in determining the medians for hours when no measured values are given because of equipment limitations and ionospheric irregularities. Symbols used are those given above.

- a. For all ionospheric characteristics:

Values missing because of A, C, F, H, L, N or R are omitted from the median count.

b. For critical frequencies and virtual heights:

Values of foF2 (and foE near sunrise and sunset) missing because of E are counted as equal to or less than the lower limit of the recorder. Values of h'F (and h'E near sunrise and sunset) missing for this reason are counted usually as equal to or greater than the median. Other characteristics missing because of E are omitted from the median count.

Values missing because of G are counted:

1. For foF2, as equal to or less than foF1.
2. For h'F2, as equal to or greater than the median.

The symbol W is included in the median count only when it replaces a height characteristic; the descriptive symbol D, only when it replaces a frequency characteristic.

Values missing for any other reason are omitted from the median count.

c. For MUF factor (M-factors):

Values missing because of G or W are counted as equal to or less than the median.

Values missing for any other reason are omitted from the median count.

d. For sporadic E (Es):

Values of fEs missing because of E or G are counted as equal to or less than the median foE, or equal to or less than the lower frequency limit of the recorder.

B for fEs is counted on the low side when there is a numerical value of a higher layer critical frequency; otherwise it is omitted from the median count.

S for fEs is counted on the low side at night; during the day it is omitted from the median count (beginning with data for November 1957).

Values of fEs missing for any other reason, and values of h'Es missing for any reason at all are omitted from the median count.

Beginning with data for November 1945, doubtful monthly median values for ionospheric observations at Washington, D.C., are indicated by parentheses, in accordance with the practice already in use for doubtful hourly values. The following are the conventions used to determine whether or not a median value is doubtful:

1. If the count is four or less, the data are considered insufficient and no median value is computed.

2. For the F2 layer, h'F or foEs, if the count is from five to nine, the median is considered doubtful. The E and F1 layers are so regular in their characteristics that, as long as the count is at least five, the median is not considered doubtful. A count of at least 5 is considered sufficient for an h'Es median.

3. For all layers, if more than half of the data used to compute the medians are doubtful (either doubtful or interpolated), the median is considered doubtful.

The same conventions are used by the CRPL in computing the medians from tabulations of daily and hourly data for stations other than Washington, beginning with the tables in IRPL-F1B.

Ordinarily, a blank space in the fEs or foEs column of a table is the result of the fact that a majority of the readings for the month are below the lower limit of the recorder or less than the corresponding values of foE. Blank spaces at the beginning and end of columns of h'F2 or h'F1, foF1, h'E, and foE are usually the result of diurnal variation in these characteristics. Complete absence of medians of h'F1 and foF1 is usually the result of seasonal effects.

The dashed-line prediction curves of the graphs of ionospheric data are obtained from the predicted zero-muf contour charts of the CRPL-D series publications. The following points are worthy of note:

- a. Predictions for individual stations used to construct the charts may be more accurate than the values read from the charts since some smoothing of the contours is necessary to allow for the longitude effect within a zone. Thus, inasmuch as the predicted contours are for the center of each zone, part of the discrepancy between the predicted and observed values as given in the F series may be caused by the fact that the station is not centrally located within the zone.
- b. The final presentation of the predictions is dependent upon the latest available ionospheric and radio propagation data, as well as upon predicted sunspot number.
- c. There is no indication on the graphs of the relative reliability of the data; it is necessary to consult the tables for such information.
- d. The tables may contain median values of either foEs or fEs. The graph of median Es corresponds to the table. Percentage curves of fEs are estimated from values of foEs when necessary.

PREDICTED AND OBSERVED SUNSPOT NUMBERS

The following predicted smoothed 12-month running-average Zürich sunspot numbers were used in constructing the contour charts:

Month	Predicted Sunspot Number										
	1958	1957	1956	1955	1954	1953	1952	1951	1950	1949	1948
December		150*	150	42	11	15	33	53	86	100	114
November	150*	150*	147	35	10	16	38	52	87	112	115
October	150*	150*	135	31	10	17	43	52	90	114	116
September	150*	150*	119	30	8	18	46	54	91	115	117
August	150*	150*	105	27	8	18	49	57	96	111	123
July	150*	150*	95	22	8	20	51	60	101	108	125
June	150*	150*	89	18	9	21	52	63	103	108	129
May	150*	150*	77	16	10	22	52	68	102	108	130
April	150*	150*	68	13	10	24	52	74	101	109	133
March	150*	150*	60	14	11	27	52	78	103	111	133
February	150*	150*	53	14	12	29	51	82	103	113	133
January	150*	150*	48	12	14	30	53	85	105	112	130

*This number is believed representative of solar activity at a maximum portion of the current sunspot cycle.

The latest available information follows concerning the corresponding observed Zürich numbers beginning with the minimum of April 1954. Final numbers are listed through June 1957.

Observed Sunspot Number

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1954				3	4	4	5	7	8	8	9	12
1955	14	16	19	23	29	35	40	46	55	64	73	81
1956	89	98	109	119	127	137	146	150	151	156	160	164
1957	170	172	174	181	186	188	191	194	196	198	200	

WORLD - WIDE SOURCES OF IONOSPHERIC DATA

The ionospheric data given here in tables 1 to 72 and figures 1 to 144 were assembled by the Central Radio Propagation Laboratory for analysis and correlation, incidental to CRPL prediction of radio propagation conditions. The data are median values unless otherwise indicated. The following are the sources of the data in this issue:

Commonwealth of Australia, Ionospheric Prediction Service of the Commonwealth Observatory:

Brisbane, Australia
Canberra, Australia
Hobart, Tasmania
Townsville, Australia

Commonwealth of Australia, Department of the Interior:
Macquarie I.

Australian Department of Supply and Shipping, Bureau of Mineral Resources, Geology and Geophysics:
Watheroo, Western Australia

Meteorological Service of the Belgian Congo and Ruanda-Urundi:
Bunia, Belgian Congo
Leopoldville, Belgian Congo

Belgian Royal Meteorological Institute:
Dourbes, Belgium

Escola Politecnica, University of São Paulo:
São Paulo, Brazil

British Department of Scientific and Industrial Research, Radio Research Board:
Falkland Is.
Inverness, Scotland
Slough, England

Defence Research Board, Canada:
Baker Lake, Canada
Churchill, Canada
Meanook, Canada
Ottawa, Canada
Resolute Bay, Canada
Winnipeg, Canada

Danish National Committee of URSI:
Narsarssuak, Greenland

General Direction of Posts and Telegraphs, Helsinki, Finland:
Nurmijarvi, Finland

The Royal Netherlands Meteorological Institute:
De Bilt, Holland
Paramaribo, Surinam

Central Institute of Meteorology, Budapest, Hungary:
Budapest, Hungary

National Institute of Geophysics, City University, Rome, Italy:
Rome, Italy

Ministry of Postal Services, Radio Research Laboratories,
Tokyo, Japan:
Akita, Japan
Tokyo (Kokubunji), Japan
Wakkanai, Japan
Yamagawa, Japan

Christchurch Geophysical Observatory, New Zealand Department
of Scientific and Industrial Research:
Campbell I.
Christchurch, New Zealand
Scott Base

Norwegian Defence Research Establishment, Kjeller per Lillestrom,
Norway:
Tromso, Norway

Telecommunication Administration, Oslo, Norway:
Svalbard, Norway

Manila Observatory:
Baguio, P. I.

South African Council for Scientific and Industrial Research:
Capetown, Union of South Africa
Johannesburg, Union of South Africa

Ebro Observatory:
Tortosa, Spain

Research Institute of National Defence, Stockholm, Sweden:
Kiruna, Sweden
Lycksele, Sweden

Post, Telephone and Telegraph Administration, Berne, Switzerland:
Schwarzenburg, Switzerland

United States Army Signal Corps:

Adak, Alaska

St. John's, Newfoundland

National Bureau of Standards (Central Radio Propagation Laboratory):

Chimbote, Peru

Maui, Hawaii

Panama Canal Zone

Talara, Peru (Instituto Geofisico de Huancayo)

Washington, D. C.

EXAMPLES OF IONOSPHERIC VERTICAL SOUNDINGS
 Belvoir, Virginia; January 8, 1958
 (Geomagnetic Latitude 50°N)

The following ionograms were obtained at the Belvoir, Virginia sounding station. They are typical of the day and night conditions for January at this geomagnetic latitude. Ionospheric data are scaled directly from these records onto the daily f-plot, a graph of frequency characteristics vs. time. The f-plot for the day represented by these soundings is found on the following page. Medians as found in the Tables of Ionospheric Data are calculated using hourly values taken from the f-plot or directly from the ionogram.

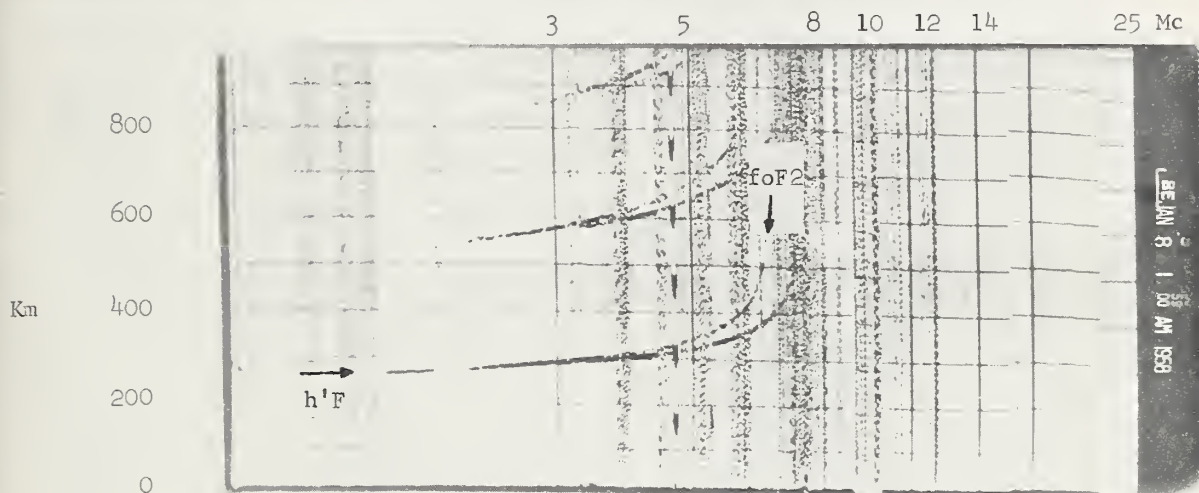


Fig. A. Belvoir, Virginia, January 8, 1958, 0100 hours, 25°W time.

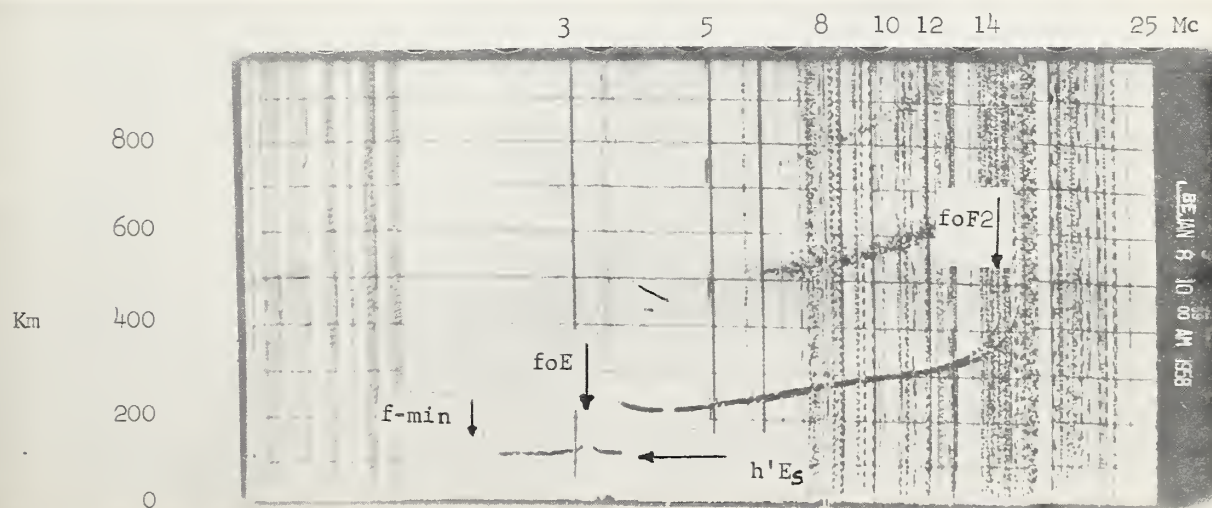
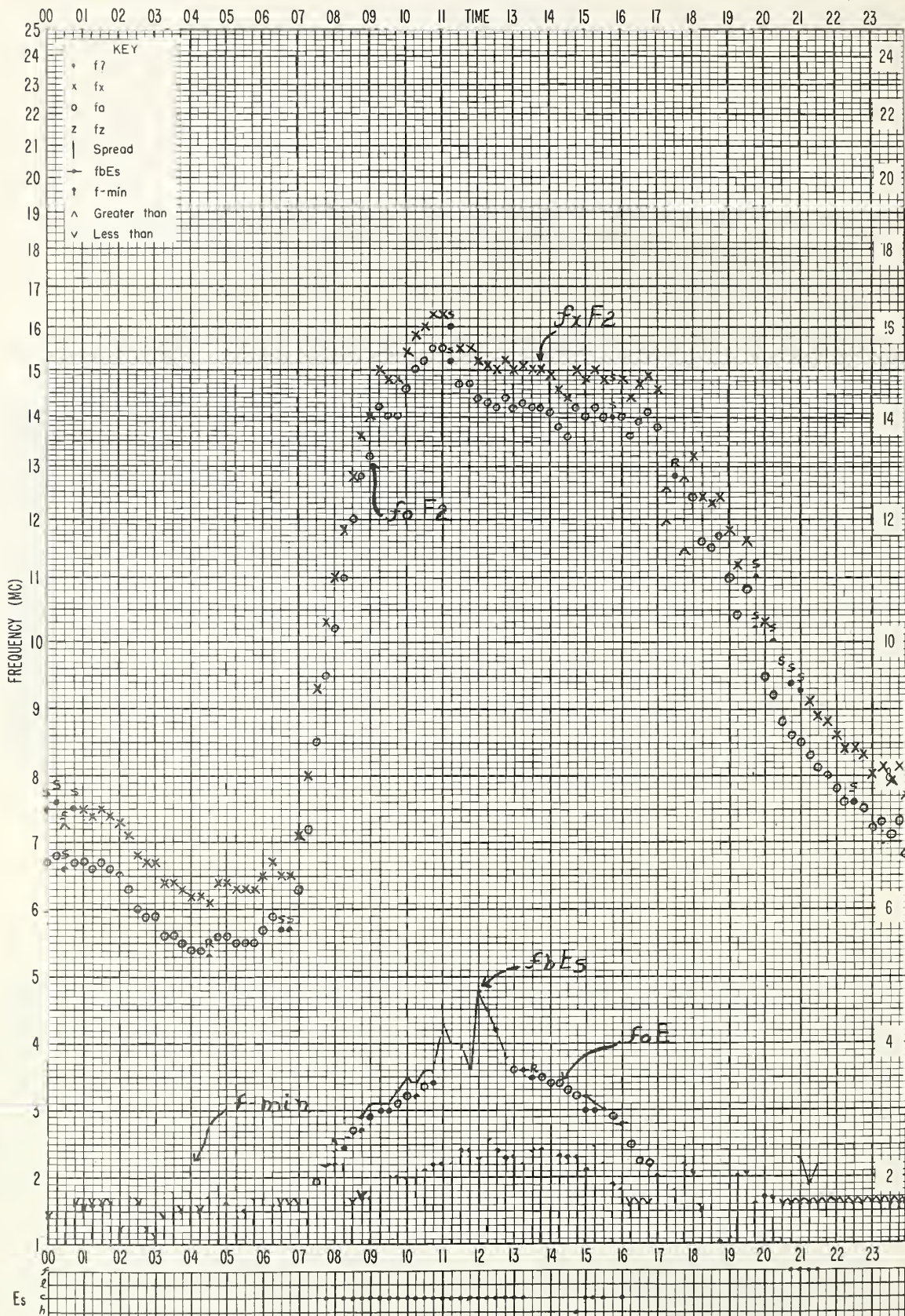


Fig. B. Belvoir, Virginia, January 8, 1958, 1000 hours, 75°W time.

STATION ION BE

f - PLOT OF IONOSPHERIC DATA

DATE JANUARY 8, 1958



SCALED BY JWP/JJS

TABLES OF IONOSPHERIC DATA

March 1958 - November 1956

Table 1

Washington, D. C. (38.7°N, 77.1°W)							
March 1958							
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs (M3000)F2
00		7.2	285				2.52
01		7.0	280				2.50
02		6.5	295				2.50
03		6.2	295				2.55
04		5.9	290				2.55
05		5.5	295				2.55
06		(5.9)	285		121	----	(2.70)
07		7.9	245		115	2.25	3.00
08	---	10.4	240		109	2.95	2.95
09	(250)	11.55	230		109	3.30	2.88
10	---	12.2	220		109	3.55	2.80
11	---	12.8	220		109	3.78	2.70
12	---	13.1	225		109	3.88	2.70
13	---	13.0	225		109	3.90	2.60
14	---	12.9	230		109	3.85	2.60
15	---	12.8	235		109	3.60	2.60
16	---	12.5	240		111	3.25	2.65
17	---	>12.2	240		113	2.65	2.70
18		11.7	250		129	1.78	2.75
19		10.6	240				2.75
20		9.5	245				2.65
21		8.6	255				2.65
22		7.8	270				2.60
23		7.4	280				2.55

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.
Note: For two days around equinox, height scale was expanded.

Table 2

Adak, Alaska (51.9°N, 176.6°W)							
February 1958							
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs (M3000)F2
00		3.5	330				2.40
01		3.3	350				2.40
02		(3.4)	(375)				2.35
03		3.55	365				2.40
04		3.5	(355)				2.40
05		3.5	(340)				2.45
06		(3.4)	<335				(2.45)
07		5.7	255		---	----	2.90
08		9.2	240		---	----	3.10
09		11.4	230		(125)	2.70	3.10
10		13.1	230		121	----	3.05
11		13.7	230		---	----	3.00
12		13.8	230		---	<124	3.40
13		13.9	235		---	----	2.90
14	---	13.3	235		---	----	2.90
15		13.1	235		---	----	2.90
16		12.3	235		---	----	2.95
17		11.3	230		---	----	3.00
18		9.5	225		---	----	3.00
19		7.4	220		---	----	3.05
20		5.7	240		---	----	3.05
21		4.55	250				2.90
22		4.0	(260)				2.75
23		3.7	310				2.60

Time: 180.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 3

Winnipeg, Canada (49.9°N, 97.4°W)							
February 1958							
Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs (M3000)F2
00		5.1	290				---
01		5.1	290				---
02		4.9	300				2.8 (2.7)
03		4.8	310				2.4
04		4.8	310				2.1
05		4.6	310				2.9
06		4.5	300				---
07		5.0	300		---	---	---
08		6.3	260		---	1.9	---
09		8.2	240		110	2.6	3.0
10	(260)	9.8	240		110	3.0	3.0
11	(270)	11.0	240		110	3.2	2.9
12	(270)	11.9	230		110	3.2	2.8
13	280	12.4	230	---	110	3.3	(2.8)
14	(280)	13.0	240	---	105	3.2	(2.7)
15	---	12.8	240		105	3.0	---
16		12.8	240		110	2.8	---
17		12.9	230		110	2.4	---
18		12.1	230		---	1.8	---
19		10.2	240				---
20		8.4	230				---
21		7.1	260				(2.9)
22		6.2	280				---
23		5.3	290				2.0

Time: 90.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 4

Washington, O. C. (38.7°N, 77.1°W)							
February 1958							
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs (M3000)F2
00		6.7	265				2.70
01		6.4	265				2.70
02		6.2	270				2.70
03		6.0	<280				2.70
04		5.6	280				2.70
05		5.4	270				2.65
06		5.2	265				2.80
07		6.6	250				3.00
08	---	10.0	235		---	111	2.50
09	---	12.2	230		---	111	3.05
10	---	13.5	220		---	109	3.40
11	---	14.0	220		---	109	3.60
12	---	14.0	220		---	110	3.70
13	---	13.9	220		---	109	3.70
14	---	13.7	220		---	109	3.60
15	---	13.7	230		---	109	3.35
16		13.5	235			111	2.90
17		13.2	235			121	2.30
18		12.5	225				2.85
19		10.9	225				2.90
20		9.5	230				2.85
21		8.5	240				2.85
22		7.6	245				2.80
23		7.2	260				2.75

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 5

Maui, Hawaii (20.8°N, 156.5°W)							
February 1958							
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs (M3000)F2
00		9.8	240				1.6
01		9.2	240				3.02
02		7.85	230				3.10
03		6.3	230				3.05
04		4.9	240				2.65
05		4.35	270				2.60
06		3.9	290				2.55
07		6.8	290		(123)	1.70	2.75
08		10.55	250		119	2.78	3.00
09	---	13.35	240		116	3.35	3.4
10	---	14.8	230		113	3.70	3.8
11	---	15.8	230		111	3.90	4.0
12	(360)	16.65	220	---	<113	4.00	2.70
13	(355)	17.15	<230	---	111	4.00	2.70
14	355	17.0	230	---	111	3.95	2.65
15	350	16.35	235	---	111	3.80	2.65
16	(340)	15.65	240		111	3.50	3.8
17		14.85	245		113	2.90	3.5
18		13.95	245		125	1.90	3.2
19		13.05	230				3.8
20		13.05	250				3.2
21		12.8	245				2.8
22		12.9	240				2.2
23		11.0	235				1.9

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 6

Resolute Bay, Canada (74.7°N, 94.9°W)							
January 1958							
Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs (M3000)F2
00		6.2	260		---	---	---
01		6.2	250		---	1.0	---
02		6.0	250		---	---	---
03		5.8	260		---	---	---
04		5.2	250		---	---	---
05		5.0	260		---	---	---
06		5.0	260		---	---	---
07		5.2	260		---	1.0	1.0
08		5.1	260		---	1.0	1.0
09		5.6	260		---	1.1	---
10		6.3	250		---	1.3	---
11		6.8	260		---	1.4	1.6
12		7.3	250		150	1.5	1.6
13		7.2	250		150	1.5	1.6
14		(7.3)	260		---	1.5	1.5
15		7.2	250		---	1.2	1.2
16		7.0	260		---	1.0	1.0
17		7.0	260		---	1.0	---
18		7.0	260		---	1.0	---
19		7.0	270		---	---	---
20		6.0	260		---	---	1.0
21		6.2	260		---	---	---
22		6.2	260		---	---	---
23		6.0	260		---	---	---

Time: 90.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 7

Tromsø, Norway (69.7°N, 19.0°E)								
January 1958								
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(6.0)	(320)				4.0	----
01		(5.6)	(340)				4.0	----
02		(5.5)	(360)				4.2	(2.30)
03		(5.8)	(370)				4.0	----
04		(6.4)	(320)				4.0	(2.40)
05		5.2	300				3.2	(2.55)
06		5.2	300				2.6	2.55
07		5.0	300				2.1	2.55
08		5.6	295					2.55
09		7.0	290					2.55
10		9.6	260		1.80	1.8		2.70
11		12.0	250		1.80			2.70
12		13.2	245	110	1.80			2.80
13		13.0	245	145	1.80	1.8		2.85
14		11.6	245	145	1.75			2.90
15		8.7	250			2.0		2.85
16		5.1	260			2.6		2.80
17		4.4	280			2.8		2.60
18		4.6	(290)			3.2		2.60
19		(5.3)	(275)			>3.2		(2.60)
20		(5.4)	(305)			>3.2		(2.55)
21		(5.4)	(305)			4.2		----
22		(5.8)	----			4.0		----
23		(5.3)	----			3.5		----

Time: 15.0°E.

Sweep: 0.7 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 9

Baker Lake, Canada (64.3°N, 96.0°W)								
January 1958								
Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		5.8	270				5.0	(2.3)
01		5.5	280				5.0	----
02		5.5	260				5.0	----
03		5.1	270				4.0	----
04		4.8	300			1.5	5.0	----
05		4.7	300			1.7	5.0	----
06		4.6	290	130	1.5	5.0		----
07		4.4	300	120	(1.8)	4.7		----
08		4.8	280	120	(2.0)	4.0		----
09		5.2	300	120	(2.0)	5.0		----
10		6.1	280	110	2.2	4.0		----
11		6.2	280	120	2.3	4.0		(2.8)
12		8.0	280	120	2.5	3.8		----
13		10.0	270	110	2.5	4.0		(2.8)
14		11.6	270	120	2.3	3.5		----
15		8.2	280	120	2.1	3.5		----
16		7.0	280	120	2.0	3.5		----
17		6.2	280	120	2.0	4.7		----
18		6.0	290	125	2.0	4.0		----
19		5.8	280	120	2.1	4.8		----
20		5.8	300	130	2.0	5.2		----
21		5.2	270		1.8	5.4		----
22		5.2	280			6.7		----
23		5.4	260			5.0		----

Time: 90.0°W.

Sweep: 1.0 Mc to 16.0 Mc in 16 seconds.

Table 11

Nurmijarvi, Finland (60.5°N, 24.6°E)								
January 1958								
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		4.3					<1.9	2.45
01		4.2					<1.8	2.50
02		(4.3)					<1.8	(2.50)
03		(3.8)					<1.8	(2.50)
04		4.0					<1.9	2.50
05		3.4					<1.8	2.65
06		3.6						2.60
07		(3.8)						(2.60)
08		4.6						2.70
09		7.7						2.80
10		11.0						2.90
11		12.6						3.00
12		14.5						3.00
13		14.7						2.90
14		14.0						2.95
15		13.5						3.00
16		13.2						3.00
17		11.8						2.90
18		9.8						2.90
19		7.8						2.00
20		5.8					<2.3	2.75
21		5.4					<1.9	2.70
22		4.5					<1.9	2.60
23		4.4					<2.0	2.50

Time: 30.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 1 minute.

Table 8

Kiruna, Sweden (67.8°N, 20.3°E)								
January 1958								
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.4	<390				4.8	2.4
01		6.0	370				5.0	2.4
02		6.5	370				4.3	2.4
03		6.6	350				3.9	2.4
04		6.5	305				3.0	2.5
05		6.0	285				3.0	2.6
06		6.0	265				3.0	2.6
07		6.0	275					2.6
08		6.0	270					2.6
09		7.0	260				1.7	2.7
10		9.4	255				1.9	2.8
11		12.0	250				2.0	2.9
12	---	13.0	245				2.0	2.9
13		13.1	240				2.0	2.9
14		12.3	240				1.8	2.9
15		10.4	240				1.6	2.8
16		7.2	245					2.6
17		5.2	270				3.0	2.7
18		5.2	290				3.5	2.6
19		5.0	310				3.5	2.6
20		4.8	<330				3.0	2.6
21		6.0	340				4.0	2.6
22		6.0	370				4.4	2.4
23		6.0	385				4.5	(2.4)

Time: 15.0°E.

Sweep: 0.8 Mc to 14.0 Mc in 30 seconds.

Table 10

Narsarsuaq, Greenland (61.2°N, 45.4°W)								
January 1958								
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(5.6)	(340)				4.0	(2.30)
01		(5.6)	(350)				3.6	(2.45)
02		(5.6)	(380)				3.4	(2.40)
03		(5.6)	(370)				3.3	(2.50)
04		(5.3)	(335)				3.5	(2.62)
05		(5.4)	330				4.0	(2.65)
06		(5.7)	(315)				3.7	(2.68)
07		(5.45)	310				2.6	(2.65)
08		(6.15)	285				2.2	(2.70)
09		8.45	260					2.90
10		11.2	250			129	2.22	2.90
11		13.6	245			125	2.40	2.85
12		13.9	245			125	2.60	2.90
13		13.1	240			125	(2.50)	2.90
14		12.2	250			125	2.40	2.90
15		(8.4)	270			137	(2.15)	(2.90)
16		(6.4)	295			(140)	(1.70)	2.4
17		(5.7)	(330)			----	----	3.0
18		(6.2)	(320)					3.8
19		(5.6)	330					3.4
20		(6.0)	(310)					3.8
21		(6.0)	(350)					4.5
22		(6.25)	(330)					3.6
23		(5.3)	(330)					3.2

Time: 45.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 12

Churchill, Canada (58.8°N, 94.2°W)								
January 1958								
Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		5.3	300		120	(2.3)	5.0	
01		5.6	300		130	2.1	4.8	
02		5.2	300		115	2.0	4.3	
03		5.1	300		130	2.0	3.1	
04		5.0	300		120	2.0	4.4	
05		5.0	320		120	2.0	4.0	
06		4.8	340		120	2.2	4.3	
07		4.9	330		115	2.8	4.2	
08		5.8	310		115	2.4	4.0	
09		7.0	290		110	2.5	4.1	(2.8)
10		9.0	270		110	2.6	3.1	(3.0)
11		10.8	260		120	2.7		(2.8)
12		12.0	260		125	2.8		(2.8)
13		13.4	260		125	2.7		2.8
14		14.2	250		120	2.5		2.8
15		14.0	250		130	2.3		----
16		12.1	260		125	2.0	2.2	----
17		8.2	280		120	1.8	3.0	
18		6.4	300		120	1.8	3.0	
19		5.8	310		120	2.1	3.1	
20		5.8	300		120	2.2	3.0	
21		5.8	300		120	2.2	4.0	
22		5.2	300		120	2.2	5.2	
23		5.3	310		----	1.9	5.0	

Time: 90.0°W.

Sweep: 1.0 Mc to 17.0 Mc in 16 seconds.

Table 13

De Bilt, Holland (52.1°N, 5.2°E)							
January 1958							
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs (M3000)F2
00	300	4.7					2.60
01	320	4.4					2.60
02	320	4.0					2.55
03	300	4.0					2.70
04	290	3.9					2.60
05	<300	3.6					2.65
06	<295	3.6					2.75
07	250	4.9					2.80
08	220	8.9			---	2.2	3.10
09	220	11.3			---	2.6	3.20
10	220	>13.0			---	2.9	3.15
11	220	>13.0			---	3.1	(3.05)
12	220	>13.0			---	3.1	(3.00)
13	220	>13.0			---	3.0	(2.95)
14	220	12.1			---	---	2.95
15	220	>12.0			---	---	3.00
16	220	>11.5			---	---	3.00
17	210	10.8					3.00
18	225	8.8					3.05
19	230	6.8					3.00
20	250	6.0					2.90
21	250	5.2					2.80
22	<295	5.0					2.60
23	300	4.8					2.65

Time: 0.0°.

Sweep: 1.4 Mc to 16.0 Mc in 40 seconds.

Table 15

Winnipeg, Canada (49.9°N, 97.4°W)							
January 1958							
Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs (M3000)F2
00		6.0	280				(2.8)
01		6.0	290				(2.7)
02		5.4	300				(2.7)
03		5.2	300				(2.7)
04		5.2	290				----
05		5.0	290				----
06		5.0	290				----
07		5.0	270				----
08		6.0	260		---	1.7	----
09		9.0	240		115	2.4	(3.05)
10		11.5	230		110	2.8	----
11		13.2	230		110	3.0	----
12		14.0	230		110	3.0	----
13		14.1	230		105	3.1	----
14		14.2	230		110	3.0	----
15		14.2	230		110	2.9	----
16		14.0	230		115	2.5	----
17		13.5	230		---	1.9	----
18		12.6	230				----
19		11.0	230				----
20		9.2	230				----
21		8.2	240				(2.9)
22		7.1	250				(2.8)
23		6.4	250				(2.85)

Time: 90.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 17

Ottawa, Canada (45.4°N, 75.9°W)							
January 1958							
Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs (M3000)F2
00		6.9	270				2.65
01		6.1	280				2.7
02		6.0	290				2.7
03		5.8	280				2.7
04		6.0	280				(2.6)
05		5.4	280				(2.6)
06		5.2	260				(2.7)
07		5.4	260				(2.7)
08		8.8	240		120	2.1	2.9
09		12.0	230		120	2.8	2.9
10		14.2	230		110	3.1	(3.0)
11		15.0	230		110	3.2	---
12		(14.8)	230		120	3.3	---
13		14.8	230		110	3.3	---
14		14.6	230		115	3.2	---
15		14.6	230		120	3.0	---
16		14.0	240		125	2.5	---
17		(13.7)	240		---	1.8	---
18		12.2	230				---
19		10.8	240				---
20		9.8	240				(2.8)
21		9.0	250				2.8
22		8.0	250				2.8
23		7.2	260				2.7

Time: 75.0°W.

Sweep: 1.0 Mc to 20.0 Mc in 16 seconds.

Table 14

Adak, Alaska (51.9°N, 176.6°W)							
January 1958							
Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs (M3000)F2
00		3.5	(315)				2.52
01		3.5	340				2.42
02		3.6	350				2.50
03		3.4	340				2.52
04		3.4	<360				2.40
05		3.3	335				2.38
06		3.2	320				2.50
07		4.75	280		---	E	2.50
08		8.7	240		---	---	3.00
09		11.8	230		---	---	3.05
10		14.0	230		---	---	3.00
11		14.4	230		---	---	2.95
12		14.5	230		---	---	2.90
13		14.1	235		---	---	2.85
14		13.5	235		---	---	2.85
15		12.8	235		---	---	2.85
16		12.0	240				2.85
17		10.8	230				2.90
18		8.6	225				2.95
19		6.6	230				3.00
20		4.9	235				2.90
21		4.0	260				2.85
22		3.6	285				2.70
23		3.5	(290)				2.70

Time: 180.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 16

St. John's, Newfoundland (47.6°N, 52.7°W)							
January 1958							
Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs (M3000)F2
00		(5.8)	290				(2.55)
01		5.9	300				2.55
02		5.6	300				2.62
03		(5.75)	285				(2.52)
04		5.2	290				2.60
05		4.9	275				2.60
06		5.1	260				2.80
07		6.8	250				2.90
08		10.4	230		(129)	2.50	3.05
09		13.7	230		121	2.90	3.10
10		14.7	225		119	3.20	3.05
11		15.2	220		115	3.30	3.00
12		15.0	220		119	3.30	2.85
13		15.0	230		117	3.25	2.85
14		14.7	230		119	3.00	2.85
15		14.4	230		125	2.65	2.80
16		13.8	230		---	----	2.85
17		12.55	230				2.80
18		11.0	230				2.82
19		9.5	240				2.75
20		9.0	250				2.80
21		7.8	260				2.70
22		6.7	270				2.65
23		6.25	280				2.60

Time: 60.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 18

Rome, Italy (41.8°N, 12.5°E)							
January 1958							
Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs (M3000)F2
00		>5.8	290				2.55
01		5.8	300				2.50
02		5.4	290				2.55
03		5.3	300				2.55
04		5.2	<290				2.55
05		4.6	<280				2.60
06		4.2	270				2.65
07		5.3	250				2.50
08		9.7	240		150	2.4	2.85
09		13.0	240		120	2.9	2.85
10		14.4	240		110	3.3	2.90
11		14.0	240		110	3.6	2.80
12		13.4	230		110	3.7	2.65
13		13.5	230		110	3.6	2.65
14		>13.4	240		110	3.5	<2.65
15		12.9	240		110	3.2	2.60
16		12.7	240		110	2.7	2.65
17		12.2	250		<140	2.1	2.65
18		(10.7)	240				(2.80)
19		9.0	240				2.70
20		7.0	240				2.60
21		(6.6)	260				<2.60
22		6.4	280				2.60
23		6.2	290				2.60

Time: 15.0°E.

Sweep: 1.5 Mc to 17.0 Mc in 35 seconds.

Table 19

Washington, O. C. (38.7°N, 77.1°W) January 1958							
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs (M3000)F2
00		7.0	250				2.75
01		6.7	265				2.70
02		6.5	260				2.75
03		6.3	265				2.65
04		6.1	260				2.60
05		5.8	260				2.65
06		5.6	250				2.75
07		6.2	240				2.65
08		9.9	230		(125)	2.30	3.05
09		13.0	230		111	2.95	3.05
10		14.6	220		111	3.30	2.95
11		15.5	225		111	3.50	2.90
12		15.0	220		111	3.65	2.80
13		14.6	220		111	3.60	2.70
14		14.3	230		111	3.45	2.65
15		14.0	230		111	3.20	2.70
16		13.8	230		119	2.70	2.70
17		13.5	240		---	----	2.75
18		12.3	225				2.75
19		11.0	230				2.75
20		9.9	240				2.80
21		8.9	240				2.75
22		8.4	245				2.80
23		7.6	250				2.80

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 21

Panama Canal Zone (9.4°N, 79.9°W) January 1958							
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs (M3000)F2
00		9.8	230				2.90
01		8.3	225				3.00
02		6.8	215				3.06
03		4.8	225				2.70
04		4.5	260				2.65
05		4.9	280				2.65
06		6.4	280				3.6
07		10.7	265		(141)	2.30	2.90
08		13.7	240		107	3.05	2.90
09		14.55	225		105	3.58	3.9
10		14.5	220		104	3.95	2.70
11	(305)	14.0	210		105	4.10	4.3
12	425	13.95	205	7.3	105	4.20	2.45
13	435	14.0	220	6.8	105	4.20	4.8
14	420	13.9	230	7.1	105	4.10	4.7
15	420	13.4	235	7.0	105	4.00	4.3
16	415	13.0	235	---	107	3.65	4.2
17	---	12.0	245		109	3.10	4.3
18		12.0	270		121	(2.10)	3.9
19		11.7	260				3.5
20		11.4	250				3.0
21		11.0	270				2.6
22		11.5	245				2.0
23		11.0	225				2.90

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 23

Johannesburg, Union of S. Africa (26.2°S, 28.0°E) January 1958							
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs (M3000)F2
00		6.6	(300)				2.0
01		6.3	(300)				2.6
02		5.9	<310				1.8
03		5.6	<300				<1.8
04		5.1	<310				1.9
05		5.0	320			<1.7	1.9
06		6.9	260			2.4	2.7
07		8.5	250			3.1	2.60
08	(470)	9.7	240	---		3.7	2.50
09	(470)	10.6	235	---		4.0	2.35
10	450	11.0	230	---		---	2.35
11	440	11.2	(220)	---		4.5	2.30
12	440	11.4	(220)	---		---	2.30
13	450	11.2	(225)	---		---	4.4
14	450	10.8	(230)	---		---	4.7
15	455	10.2	230	6.1	4.1	4.4	2.30
16	465	9.6	235	5.8	3.9	4.2	2.30
17	460	9.3	245	5.4	3.4	3.9	2.35
18		9.3	255			2.8	3.5
19		9.2	300			<2.2	<2.6
20		(8.8)	290				2.4
21		8.2	285				2.0
22		7.6	300				<2.1
23		7.1	300				1.9

Time: 30.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 7 seconds.

Table 20

Maui, Hawaii (20.8°N, 156.5°W) January 1958							
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs (M3000)F2
00		9.3	245				2.85
01		9.0	245				3.00
02		7.8	230				3.10
03		6.3	225				3.00
04		4.7	235				2.60
05		4.0	280				2.50
06		4.1	310				2.50
07		6.8	320		127	1.70	2.4
08		11.5	255		119	2.75	3.05
09		13.6	240		115	3.35	2.90
10	---	14.1	235		111	3.75	3.9
11	---	14.3	220		<111	(3.95)	4.1
12	400	14.0	230		7.0	111	(4.00)
13	420	15.7	230		7.7	111	(4.05)
14	415	15.6	235		7.3	111	4.00
15	410	15.5	235		7.0	113	3.85
16	(405)	15.4	245	---	113	3.50	3.6
17		14.3	250		116	2.80	3.9
18		13.0	250		---	----	3.0
19		12.3	260		---	----	3.2
20		12.2	250				3.2
21		11.5	240				2.8
22		10.8	230				2.0
23		9.9	240				2.80

Time: 150.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 22

Talara, Peru (4.6°S, 81.3°W) January 1958							
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs (M3000)F2
00		11.6	280				4.5
01		>11.4	255				4.5
02		10.7	260				4.2
03		9.7	250				3.4
04		8.4	240				4.0
05		6.3	230				3.6
06		5.8	255				4.2
07		9.7	270		121	2.50	4.1
08		12.6	245		111	3.30	4.6
09		13.8	230		111	3.90	4.6
10		14.1	220		111	4.15	4.4
11		14.2	210	---	111	4.40	2.10
12	---	13.2	210	7.2	111	4.45	2.05
13	(570)	13.0	205	6.9	109	4.40	2.05
14	(570)	13.2	200	6.5	<110	4.30	2.10
15	---	13.4	220	6.4	109	4.00	4.6
16	(515)	13.6	240		111	3.80	4.4
17		13.6	255		113	3.40	4.5
18		13.3	275		121	2.60	4.4
19		>13.0	<320		---	----	3.7
20		>12.8	360				2.9
21		>11.8	350				2.2
22		>11.8	<310				2.6
23		>12.0	295				3.2

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 24

Capetown, Union of S. Africa (34.1°S, 18.3°E) January 1958							
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs (M3000)F2
00		6.0	<320				<1.9
01		5.7	<315				1.9
02		5.5	<320				2.0
03		5.1	<320				2.2
04		4.9	<340				1.7
05		4.6	<335			<1.5	<2.0
06		5.6	295			<1.9	2.1
07	---	7.6	260	---		2.8	2.8
08	(545)	8.7	250	5.4		3.3	2.45
09	490	>9.6	245	6.0		3.7	<2.40
10	450	>9.8	(230)	6.2		4.0	<2.40
11	470	(10.2)	---	6.6		---	<2.35
12	470	>10.5	---	6.4		---	<2.35
13	465	>10.6	---	6.2		---	(5.0)
14	465	>10.4	---	6.2		---	4.9
15	475	>9.9	---	6.2		---	4.7
16	475	(9.5)	240	6.1		4.0	4.2
17	450	(9.3)	240	5.8		3.7	4.1
18	(450)	8.8	250	---		3.2	3.6
19		8.7	270			2.7	3.0
20		8.1	290			<2.0	2.4
21		7.6	(290)				2.4
22		7.0	<295				2.1
23		6.3	<295				2.6

Time: 30.0°E.

Sweep: 1.0 Mc to 17.0 Mc in 7 seconds.

Table 25

Scott Base (77.8°S, 166.8°E)							
January 1958							
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs (M3000)F2
00	500	5.3	200	3.9	110	2.6	2.20
01	530	5.2	300	4.0	110	2.6	2.10
02	540	5.0	300	4.0	105	2.7	2.10
03	550	5.2	290	4.0	105	2.8	2.20
04	560	5.3	290	4.0	105	3.0	2.10
05	520	5.6	270	4.3	105	3.0	2.20
06	560	6.0	260	4.5	100	3.2	2.25
07	540	6.0	260	4.5	100	3.2	2.30
08	550	6.0	250	4.8	100	3.3	2.20
09	560	6.1	250	4.9	100	3.4	2.15
10	620	6.0	250	5.0	100	3.5	2.10
11	640	6.2	230	5.0	100	3.5	2.15
12	600	6.2	240	5.0	100	3.5	2.10
13	590	6.2	250	5.0	100	3.5	2.10
14	610	6.4	250	5.0	105	3.5	2.15
15	590	6.4	240	5.0	100	3.5	2.15
16	550	6.4	250	4.8	100	3.4	2.10
17	530	6.5	250	4.7	100	3.3	2.15
18	500	6.4	240	4.5	105	3.2	2.15
19	520	6.4	260	4.3	100	3.0	2.20
20	530	6.1	260	4.2	105	2.9	2.20
21	520	6.0	280	4.0	105	2.8	2.20
22	510	5.6	300	4.0	110	2.7	2.15
23	550	5.2	290	3.8	110	2.6	2.10

Time: 165.0°E.

Table 26

Kiruna, Sweden (67.8°N, 20.3°E)							
December 1957							
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs (M3000)F2
00		6.0	390				(4.3) 2.4
01		(6.4)	370				(4.3) 2.4
02		6.2	360				(4.3) 2.4
03		6.4	340				(3.6) 2.4
04		6.5	335				(3.2) 2.4
05		6.3	320				(2.4) 2.45
06		6.0	305				(3.0) 2.6
07		6.0	280				2.3 2.6
08		5.6	290				(2.4) 2.6
09		7.0	280				2.0 2.6
10		9.3	260		---	1.7	1.7 2.7
11		11.8	250		---	1.9	(2.5) 2.8
12		13.0	240		---	2.0	(2.5) 2.8
13		12.5	245		---	1.9	2.8 2.8
14		11.9	245		---	1.5	1.9 2.9
15		9.0	240				(2.3) 2.75
16		7.0	250				(3.0) 2.8
17		6.3	260				(3.0) 2.75
18		5.0	285				(3.1) 2.7
19		6.0	300				(3.3) 2.65
20		5.5	325				(4.3) 2.6
21		(6.2)	370				(4.3) (2.6)
22		(6.0)	410				(4.3) (2.5)
23		(6.1)	385				(4.3) (2.4)

Time: 15.0°E.

Sweep: 0.8 Mc to 14.0 Mc in 30 seconds.

Table 27

Lycksele, Sweden (64.6°N, 18.8°E)							
December 1957							
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs (M3000)F2
00		5.8	370				2.4 2.5
01		5.8	345				2.2 2.55
02		6.0	330				2.2 2.5
03		6.1	330				2.1 2.6
04		6.0	305				1.8 2.6
05		5.8	270				1.5 2.6
06		5.5	255				2.6
07		5.0	250				2.6
08		5.6	250				2.6
09		8.1	260		---	E	2.9
10		10.5	250		125	1.60	3.0
11		12.2	240		110	1.95	3.0
12		12.7	240		105	1.95	3.0
13		13.0	230		105	---	3.0
14		12.6	230		105	2.00	3.0
15		11.5	230		120	1.70	3.0
16		9.4	225		---	E	3.0
17		7.8	240		---	E	3.0
18		5.3	250				2.8
19		5.3	280				2.6
20		5.0	300			2.0	2.0 2.55
21		5.1	320			1.9	2.0 2.6
22		4.9	340			2.0	2.2 2.4
23		5.5	375			2.6	2.6 2.4

Time: 15.0°E.

Sweep: 1.4 Mc to 17.0 Mc in 6 minutes, automatic operation.

Table 28

Churchill, Canada (58.8°N, 94.2°W)							
December 1957							
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs (M3000)F2
00		5.2	310		125	2.0	5.0
01		5.1	330		120	2.0	5.0
02		5.1	330		120	2.0	5.0
03		5.0	340		120	1.8	4.6
04		5.0	330		120	2.0	4.3
05		4.9	340		120	2.3	4.6
06		4.9	340		115	2.0	4.0
07		5.0	350		115	2.0	4.0
08		5.4	320		110	2.2	4.3
09		7.0	280		110	2.2	4.0
10		9.0	260		120	2.5	4.3
11		11.3	260		130	2.6	4.0
12		12.8	260		130	2.6	4.1
13		13.3	260		130	2.6	4.1
14		14.0	260		125	2.4	4.2
15		13.6	260		120	2.2	3.0
16		8.6	280		125	1.9	3.0
17		6.1	300		120	2.0	4.2
18		6.2	320		120	2.3	3.5
19		5.9	320		115	2.4	4.0
20		5.9	300		120	2.0	3.8
21		5.7	320		120	2.2	4.3
22		5.6	360		120	2.0	5.3
23		5.5	340		120	2.0	5.6

Time: 90.0°W.

Sweep: 1.0 Mc to 17.0 Mc in 16 seconds.

Table 29

Inverness, Scotland (57.4°N, 4.2°W)							
December 1957							
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs (M3000)F2
00		4.6	350				<1.2 2.60
01		4.2	350				<1.3 2.55
02		4.2	345				<1.3 2.60
03		4.2	340				<1.3 2.55
04		4.8	320				<1.3 2.70
05		4.8	295				<1.4 2.75
06		4.5	260				<1.3 2.80
07		4.6	270				<1.4 2.90
08		5.8	255				<1.3 2.85
09		9.0	250		170	---	2.5 3.15
10		12.2	250		115	2.40	3.20
11		13.8	245		125	2.60	3.20
12		15.3	235		125	2.70	3.20
13		>15.2	235		125	2.65	3.10
14		15.2	235		125	2.50	3.15
15		14.6	235		140	2.15	3.15
16		13.6	235		---	1.65	3.10
17		11.9	215				<1.6 3.15
18		8.5	225				<1.5 3.05
19		7.0	245				<1.6 2.95
20		5.8	260				<1.4 2.90
21		5.4	290				<1.4 2.75
22		4.8	315				<1.4 2.65
23		4.8	350				<1.4 2.55

Time: 0.0°.

Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 30

Ottawa, Canada (45.4°N, 75.9°W)							
December 1957							
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs (M3000)F2
00		6.7	300				---
01		6.4	300				(2.4)
02		6.2	300				(2.4)
03		6.0	310				---
04		(6.1)	300				---
05		5.8	300				(2.5)
06		(5.4)	300				---
07		5.9	290				(2.6)
08		8.8	270		130	2.2	2.75
09		11.8	260		120	2.8	(2.8)
10		13.2	250		120	3.1	---
11		(13.8)	240		120	3.2	---
12		(14.0)	250		120	3.3	---
13		(14.0)	250		115	3.3	---
14		(13.5)	250		115	3.0	---
15		(13.2)	260		120	2.8	---
16		(13.0)	260		---	2.1	---
17		(12.2)	260				---
18		(11.0)	260				---
19		(9.5)	270				---
20		8.8	270				---
21		7.9	290				(2.5)
22		7.2	290				(2.55)
23		6.9	300				---

Time: 75.0°W.

Sweep: 1.6 Mc to 20.0 Mc in 15 seconds.

Table 31

Wakkanai, Japan (45.4°N, 141.7°E)

December 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		4.8	320					2.35
01		4.6	325					2.40
02		4.7	320					2.40
03		4.5	300					2.40
04		4.5	300					2.45
05		4.3	275					2.60
06		3.8	270					2.80
07		7.1	250			----		2.90
08		10.4	240			2.50		2.95
09		12.8	245			2.95		3.00
10		13.3	240			3.25		2.95
11		12.9	235			3.45		2.90
12		12.5	235			3.45		2.75
13		12.1	245			3.30		2.70
14		11.8	245			2.90	3.2	2.70
15		11.2	245			2.30		2.70
16		10.2	250				3.5	2.70
17		9.3	250					2.70
18		8.2	250					2.75
19		7.0	250					2.75
20		5.8	260					2.65
21		5.3	300					2.50
22		5.0	320					2.45
23		4.8	320					2.35

Time: 135.0°E.

Sweep: 1.0 Mc to 20.7 Mc in 1 minute.

Table 33

Akita, Japan (39.7°N, 140.1°E)

December 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.0	320					2.55
01		5.0	340					2.55
02		4.9	330					2.55
03		4.8	310					2.60
04		4.5	315					2.45
05		4.5	335					2.55
06		4.6	295					2.90
07		7.8	250					2.90
08		11.2	240			3.00		2.90
09		12.8	245			2.90		2.85
10		13.8	245			2.85		2.75
11		13.2	245			2.90		2.65
12		12.7	245			2.65		2.60
13		12.1	250			2.60		2.65
14		11.8	250			2.65		2.70
15		11.5	255			2.70		2.70
16		10.6	255			2.70		2.80
17		9.8	290			2.70		2.80
18		8.6	265			2.80		2.70
19		7.8	260			2.80		2.55
20		6.5	260			2.70		2.50
21		5.6	300			2.55		2.50
22		5.4	340			2.50		2.55
23		5.3	345			2.55		

Time: 135.0°E.

Sweep: 1.0 Mc to 20.0 Mc in 20 seconds.

Table 35

Yamagawa, Japan (31.2°N, 130.6°E)

December 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(8.0)	255					(2.70)
01		7.5	250					2.75
02		6.8	245					2.80
03		6.0	245					2.85
04		5.4	240					2.85
05		4.2	250					2.60
06		4.6	<295					2.60
07		7.8	250					2.90
08		11.8	235			2.50	2.6	3.20
09		13.4	230			3.15		3.05
10		13.9	225			3.60		2.90
11		13.7	225			(3.80)	4.1	2.70
12	---	13.4	220			3.90		2.70
13		13.5	225			(3.90)		2.60
14		13.4	230			(3.75)		2.60
15		13.0	240			3.40		2.60
16		12.6	240			2.80		2.65
17		12.4	245			1.85	3.0	2.70
18		11.7	235					2.70
19		11.0	240					2.80
20		(10.4)	240					(2.75)
21		(9.7)	230					(2.80)
22		(9.0)	235					(2.65)
23		(8.4)	250					(2.60)

Time: 135.0°E.

Sweep: 1.0 Mc to 20.0 Mc in 1 minute.

Table 32

Tortosa, Spain (40.8°N, 0.5°E)

December 1957*

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.4	<285					2.4
01		6.1	280					2.3
02		5.8	285					2.3
03		5.4	260					2.2
04		4.9	280					2.54
05		4.5	270					2.54
06		4.7	280					2.58
07		7.3	250		192	1.80	1.8	2.72
08	---	11.3	230	---	120	2.30	2.8	3.14
09	(270)	12.7	230	8.2	110	3.00	3.2	2.92
10	(270)	13.3	230	8.2	110	3.30		2.70
11	280	>13.2	230	7.8	110	3.60	3.7	(2.82)
12	310	13.2	225	7.6	110	3.70		2.70
13	(300)	12.8	235	7.8	110	3.60		2.57
14	320	12.8	235	6.8	110	3.30		2.64
15	---	12.5	240	---	115	2.90	3.2	2.70
16	---	11.7	240	---	125	2.30	2.6	(2.68)
17		10.8	230				2.4	---
18		9.7	<245				2.2	(2.72)
19		8.5	245				2.6	(2.60)
20		7.0	245				2.4	2.62
21		6.5	<280				2.2	2.41
22		6.6	300				2.7	2.46
23		6.4	290				2.6	2.50

Time: Local.

*Data observed only from December 9 to 31, inclusive.

Table 34

Tokyo, Japan (35.7°N, 139.5°E)

December 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.7	300					2.60
01		5.5	295					2.70
02		5.2	290					2.65
03		4.9	300					2.65
04		4.3	300					2.50
05		4.4	330					2.55
06		4.9	275					2.80
07		8.7	240			2.20		3.00
08		11.4	240			2.90		3.05
09	---	13.0	240			3.35		2.90
10	---	13.9	240			3.60		2.85
11	---	13.6	240			3.80		2.65
12	---	12.0	240	---		3.80		2.60
13	---	12.6	240	---		3.70		2.60
14	---	12.3	245	---		3.40		2.55
15		11.8	250			3.00		2.60
16		11.0	250			2.35		2.65
17		10.3	250					2.70
18		9.6	260					2.80
19		8.6	250					2.75
20		7.3	245					2.75
21		6.8	255					2.70
22		6.2	300					2.60
23		5.9	300					2.60

Time: 135.0°E.

Sweep: 2.0 Mc to 20.0 Mc in 20 seconds.

Table 36

Baquiao, P. I. (16.4°N, 120.6°E)

December 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		11.0	250					2.65
01		10.9	250					2.70
02		9.6	250					2.80
03		7.8	240					2.80
04		6.7	260					2.65
05		6.4	270					2.60
06		6.8	290					2.50
07		10.6	300		<130	2.60		2.60
08		14.2	275		119	3.30		2.60
09		15.1	260		117	3.75		2.55
10	---	14.8	250		115	4.00		2.40
11	(530)	14.5	245		115	(4.05)		2.20
12	(610)	13.8	245	7.0	115	(4.10)		2.10
13	---	13.2	245		117	4.05		2.00
14	---	12.8	250		119	3.95		2.00
15		12.8	265		119	3.70	4.0	2.00
16		>12.0	280		121	3.20	3.7	(2.05)
17		>12.0	310		(149)	2.40	4.0	(2.05)
18		12.0	350				3.8	2.10
19		(11.7)	405				2.1	(2.10)
20		(11.5)	385				2.0	(2.15)
21		(11.7)	320				2.2	2.30
22		(11.8)	270					(2.50)
23		11.4	250				1.8	2.60

Time: 120.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 37

Bunia, Belgian Congo (1.5°N, 30.2°E)

December 1957

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	10.9					1.5	2.30
01	250	10.7						2.62
02	230	9.5					1.8	2.65
03	230	8.6					2.0	2.66
04	270	8.2			130	1.9	3.0	2.59
05	---	9.6	250	---	110	3.0	3.9	2.54
06	---	10.7	240	---	110	3.6	3.9	2.30
07	---	11.4	235	---	110	4.0		2.05
08	---	11.9	225	---	110	4.2		1.96
09	500	12.2	220	7.0	110	4.4		1.90
10	515	13.0	220	6.7	110	4.5		2.00
11	515	13.6	230	6.5	110	4.4		2.01
12	550	12.8	230	6.2	110	4.2		1.97
13	555	12.9	240	6.0	110	4.0		1.94
14	580	13.0	250	---	110	3.6	4.0	1.97
15	615	12.6	275	---	115	3.0	3.7	1.92
16	610	12.0	335	---			3.0	1.88
17	450	11.5					3.0	1.76
18	445	(12.4)					2.8	(1.98)
19	350	(12.8)					2.7	(2.10)
20	310	---					2.8	---
21	295	(11.4)					2.6	(2.24)
22	300	(11.6)					2.1	(2.23)
23	300	11.4						2.30

Time: 0.0°.

Sweep: 1.0 Mc to 20.0 Mc in 7 seconds.

Table 38

Leopoldville, Belgian Congo (4.4°S, 15.2°E)

December 1957

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	11.8						2.30
01	270	10.0						2.38
02	255	9.0						2.40
03	250	8.0						2.46
04	250	6.5						2.38
05	270	8.0			125	2.1	2.9	2.49
06	260	9.1	250	---	110	3.1	3.7	2.53
07	260	9.8	240	---	105	3.7		2.30
08	---	10.6	230	---	105	4.0		2.00
09	(450)	11.2	235	---	105	4.2		1.90
10	510	12.0	235	6.8	105	4.2		1.80
11	510	12.8	240	---	105	4.2		1.97
12	490	13.0	240	6.2	105	4.4		1.99
13	485	12.9	230	6.0	105	4.1		1.98
14	500	12.8	240	6.0	110	4.0		1.96
15	470	12.8	250	---	110	3.6	4.0	1.96
16	450	12.8	265	---	110	3.0	3.4	2.00
17	395	12.7	310	---			3.2	2.00
18	390	13.0					3.1	1.97
19	380	13.8					2.4	2.08
20	320	15.0					2.3	2.29
21	265	14.5					2.0	2.40
22	255	13.0						2.30
23	270	12.0						2.32

Time: 0.0°.

Sweep: 1.0 Mc to 20.0 Mc in 7 seconds.

Table 39

Sao Paulo, Brazil (23.5°S, 46.5°W)

December 1957

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00		11.8	330				<2.3	2.60
01		10.0	300				<2.2	2.60
02		8.8	290				<2.3	2.55
03		8.3	300				<2.1	2.40
04		8.0	300				<2.1	2.35
05		7.5	290				<2.2	2.40
06		8.4	270			<2.65	<2.6	2.50
07		9.4	250	---		3.00	3.4	2.40
08		10.2	250	---		3.45	3.6	2.20
09		10.5	245	6.9		3.90		2.15
10	(570)	(11.4)	(245)	6.9		---		(2.15)
11	570	(11.3)	---	6.8		---		(2.20)
12	530	>11.4	---	7.0		---		(2.20)
13	530	(12.2)	<270	6.7		---		(2.20)
14	540	(12.8)	(240)	6.6		---		(2.25)
15	510	13.0	240	6.3		---		2.25
16	510	12.4	250	6.1		---		2.30
17	---	12.9	260	---		3.20	3.3	2.25
18	(12.6)	290				2.60	<3.2	(2.20)
19	(12.6)	365					2.9	(2.20)
20	>12.0	440					<2.2	2.10
21	(12.6)	440					<2.2	(2.15)
22	(12.2)	410					<2.5	(2.30)
23		12.0	380				<2.5	2.40

Time: 45.0°W.

Sweep: 1.75 Mc to 20.0 Mc in 2 minutes 30 seconds.

Table 41

Watheroo, W. Australia (30.3°S, 115.9°E)

December 1957

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00		7.0	<320				4.1	2.40
01		6.6	<320				4.1	2.40
02		6.4	<330				3.3	2.30
03		6.0	<320				3.3	2.30
04		5.8	<340				3.1	2.35
05	---	6.0	330	---	---	<1.80		2.45
06	---	7.0	270	---	110	2.70	3.1	2.60
07	(505)	7.1	250	5.1	110	3.30	4.0	2.50
08	550	7.2	250	5.6	110	3.80	5.0	2.40
09	530	7.5	<250	6.0	110	4.00	4.8	2.30
10	520	8.6	240	6.0	110	4.20	5.0	2.25
11	495	8.2	<240	6.2	110	4.25	5.0	2.20
12	540	8.4	250	6.0	110	4.40	5.0	2.25
13	520	8.1	<250	6.0	110	4.40	5.2	2.25
14	510	>8.6	<250	6.0	110	4.20	5.0	2.25
15	490	8.5	(250)	5.9	110	4.20	5.0	2.30
16	480	8.3	<260	5.7	110	3.85	4.6	2.35
17	460	8.3	260	5.4	110	3.50	4.0	2.40
18	---	8.0	<270	---	110	2.80	3.4	2.45
19	---	8.0	<310	---		<1.60	3.1	2.50
20		7.9	(300)					2.50
21		7.4	<310				2.0	2.40
22		7.2	<320				2.8	2.40
23		7.1	(320)				3.6	2.40

Time: 120.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 1 minute 45 seconds.

Table 42

Capetown, Union of S. Africa (34.1°S, 18.3°E)

December 1957

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00		6.4	<320				2.1	2.40
01		6.0	<330				2.5	2.40
02		5.6	<315				2.4	2.40
03		5.1	<315				2.6	2.40
04		4.8	<330				2.2	2.35
05		5.0	365			<1.6	<1.7	2.35
06		6.6	295			<2.4		2.55
07	---	7.7	260	---		3.1		2.45
08	(505)	8.8	250	5.8		3.6	3.7	2.35
09	490	>9.4	(245)	6.1		4.0	4.2	2.30
10	495	>9.8	---	6.4		4.1	4.7	2.30
11	495	>10.0	---	6.4		---	4.9	2.30
12	500	>9.9	---	6.4		---	5.5	<2.30
13	500	(9.8)	---	6.3		---	5.1	<2.30
14	500	(9.7)	---	6.2		---	5.0	<2.30
15	490	>9.2	---	6.1		---	4.8	2.30
16	475	(9.0)	---	5.9		4.0	4.5	<2.35
17	475	(8.7)	(250)	5.8		3.8	4.1	2.35
18	---	8.6	260	---		3.3	3.5	2.40
19		8.2	290			2.7	3.0	2.50
20		8.2	300			---	2.7	2.55
21		7.6	295				2.4	2.45
22		7.1	(300)				2.4	2.45
23		6.7	<305				2.4	2.45

Time: 30.0°E.

Sweep: 1.0 Mc to 17.0 Mc in 7 seconds.

Table 43

Canberra, Australia (35.3°S, 149.0°E)								
December 1957								
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		>7.5	310				3.7	(2.30)
01		>7.1	310				2.6	2.20
02		6.9	335				2.1	2.25
03		6.5	330				2.0	2.30
04		6.2	330				1.4	2.40
05		(6.4)	300		110	2.10	2.4	2.50
06	(450)	6.8	255	(4.5)	110	2.85	3.1	2.45
07	520	7.0	230	(5.3)	105	3.40	3.8	2.35
08	515	7.4	230	5.8	100	3.80	4.5	2.30
09	515	7.7	(225)	6.1	100	4.00	5.2	2.30
10	530	>8.2	<245	6.4	100	4.10	5.4	2.25
11	495	>8.0	<250	6.4	100	4.25	5.4	2.25
12	495	8.6	(240)	6.5	100	(4.30)	5.2	(2.30)
13	510	8.5	---	(6.4)	100	---	5.8	2.25
14	485	8.6	<240	6.4	100	4.20	5.0	2.30
15	500	8.5	<230	(6.2)	100	4.10	4.7	2.30
16	460	8.4	225	5.8	100	4.00	4.2	2.35
17	430	8.4	240	(5.5)	110	3.50	4.1	2.40
18	---	8.1	(275)	---	110	2.85	4.2	2.45
19		>7.6	(305)	---	115	<1.95	4.3	2.45
20		>7.5	330				4.1	(2.35)
21		(7.6)	(340)				3.8	(2.35)
22		>7.6	(330)				4.4	---
23		>7.6	330				3.7	---

Time: 150.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 45

Campbell I. (52.5°S, 169.2°E)								
December 1957								
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.8	360		---	---	3.2	(2.30)
01		4.5	370		---	---	3.3	2.30
02		(5.4)	360		---	---	2.8	(2.30)
03		(4.9)	350		125	1.7	2.4	(2.40)
04		5.4	300		100	2.2	2.5	2.50
05	(550)	5.4	250	4.3	100	2.9	3.0	2.40
06	520	5.7	250	4.9	105	3.3		2.35
07	600	6.3	240	5.1	100	3.6		2.30
08	550	6.6	230	5.4	100	3.8	4.2	2.35
09	(640)	6.5	220	5.6	100	4.0	4.1	(2.35)
10	580	(6.6)	210	6.0	100	4.1		(2.30)
11	550	6.7	210	5.8	100	4.1		2.30
12	560	6.8	220	5.9	100	4.2		2.30
13	580	7.2	210	6.0	100	4.2		2.20
14	530	7.2	220	5.7	100	4.1		2.30
15	520	7.4	220	5.6	100	3.9		2.30
16	480	7.5	240	5.4	105	3.8		2.30
17	460	7.6	250	5.2	105	3.4		2.35
18	(450)	7.4	260	4.6	110	3.1		2.40
19	---	7.4	280	---	115	2.4		(2.40)
20		6.8	350		120	1.9	2.1	2.25
21		(7.0)	350		---	<1.4	2.1	(2.35)
22		(6.5)	350		---	E	2.8	---
23		---	390		---	---	3.3	---

Time: 165.0°E.

Sweep: 1.0 Mc to 15.0 Mc in 5 minutes, manual operation.

Table 47

Oe Bilt, Holland (52.1°N, 5.2°E)								
November 1957								
Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00	<320	5.6						2.45
01	<320	5.3						2.50
02	<310	5.2						2.55
03	(305)	5.1						2.60
04	<300	4.6						2.65
05	<265	4.2						2.60
06	<275	4.4						2.65
07	235	7.6			---	E		2.90
08	220	11.7			---	2.6		3.05
09	220	>12.4			110	3.0		2.95
10	220	>12.5			115	3.2		---
11	220	>12.8			115	3.3		(2.90)
12	220	>11.6			120	3.4		---
13	225	>11.5			120	3.2		---
14	225	>11.5			120	3.0		---
15	225	>11.5			125	2.5		---
16	225	>11.5						(3.00)
17	225	11.2						2.90
18	230	>9.6						2.90
19	230	8.2						2.60
20	260	7.0						2.70
21	(285)	6.6						2.70
22	300	6.2						2.60
23	(310)	5.9						2.55

Time: 0.0°.

Sweep: 1.4 Mc to 16.0 Mc in 40 seconds.

Table 44

Falkland Is. (51.7°S, 57.8°W)								
December 1957								
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		9.7	355				3.1	2.15
01		9.6	350					2.10
02		9.5	350					3.1
03		9.4	375				1.50	2.3
04		9.8	310				2.10	3.6
05	490	10.4	285	4.6	120	2.70	3.1	1.95
06	500	11.1	255	5.5	110	3.20	4.8	2.00
07	500	10.9	250	5.9	105	3.60	5.6	2.00
08	490	10.8	250	6.1	105	3.90	6.8	2.10
09	500	10.8	250	6.2	100	4.10	5.8	2.10
10	500	10.6	245	6.2	100	4.20	6.2	2.10
11	505	10.3	240	6.3	100	4.20	5.5	2.15
12	490	10.1	240	6.3	100	4.20	5.6	2.20
13	500	9.5	250	6.3	100	4.20	4.9	2.25
14	500	9.0	245	6.1	105	4.10	4.7	2.30
15	480	8.5	250	5.9	105	4.00	4.8	2.30
16	490	8.2	250	5.7	105	3.80	5.6	2.30
17		8.2	250	---	105	3.40	6.4	2.30
18		8.2	260		110	3.00	5.3	2.35
19		8.1	295		120	2.30	4.8	2.30
20		8.4	320			1.60	4.8	2.20
21		8.9	350				4.6	2.05
22		9.4	390				3.5	2.05
23		9.7	365				3.3	2.10

Time: 60.0°W.

Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 46

Nurmijarvi, Finland (60.5°N, 24.6°E)								
November 1957								
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.4					<2.0	2.50
01		5.2					<1.8	2.45
02		4.5					<1.7	2.50
03		(5.1)					<1.7	(2.50)
04		4.5					<1.8	2.60
05		(4.3)					<1.6	(2.65)
06		4.4						2.70
07		4.2						2.60
08		6.6						(2.75)
09		10.7						2.90
10		12.7						2.90
11		14.3						2.90
12		14.8						2.85
13		15.5						2.80
14		15.0						2.90
15		14.5						2.90
16		14.1						2.90
17		12.5						2.90
18		10.6						2.85
19		9.0						2.80
20		6.3					<2.0	2.70
21		6.2					<2.0	2.60
22		5.8					<2.0	2.60
23		5.3					<1.9	2.50

Time: 30.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 1 minute.

Table 48

Slough, England (51.5°N, 0.6°W)								
November 1957								
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.2	320				<1.3	2.30
01		5.8	310				<1.0	2.30
02		5.7	310				<0.9	2.35
03		5.5	310				<1.0	2.40
04		5.0	300				<1.1	2.45
05		4.6	270				<1.2	2.45
06		4.5	260				<1.5	2.35
07		6.6	255					2.55
08		>10.2	245		185	1.75		(2.55)
09		13.9	235		140	2.40		2.70
10		>15.0	240		120	2.80		
11		>15.1	235		115	3.10	3.4	(2.65)
12		(13.3)	235		115	3.25		(2.55)
13		>15.1	240		115	3.30		(2.55)
14		(14.9)	240		125	3.20		(2.50)
15		>14.5	240		130	2.95	3.0	(2.55)
16		(13.6)	245		130	2.60		(2.55)
17		>12.5	240		145	2.05		(2.50)
18		>9.4	240				<1.6	(2.60)
19		9.1	245				<1.6	(2.50)
20		7.8	250				<1.6	2.50
21		7.2	275				<1.6	2.40
22		6.7	300				<1.6	2.40
23		6.4	310				<1.6	2.30

Time: 0.0°.

Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 49

Dourbes, Belgium (50.1°N, 4.6°E)

November 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.9	305				<1.4	2.40
01		5.7	300					2.40
02		5.6	300					2.40
03		5.4	290					2.45
04		5.0	<280				<1.4	2.55
05		4.5	<250				<1.6	2.50
06		4.9	250				<1.6	2.55
07		7.9	230		<175	2.05		2.95
08		(11.4)	225		109	2.65		<3.00
09		13.9	220		109	3.00		3.00
10		15.0	220		107	3.20		3.00
11		(14.8)	220		109	3.30		(2.95)
12	---	>14.6	220	---	112	3.30		2.85
13		14.4	225		113	3.15		(2.85)
14		14.1	225		113	2.90		2.85
15		>13.7	225		115	2.50	2.6	2.85
16		>13.0	230		---	1.85	1.9	2.85
17		>11.0	220				1.9	(2.80)
18		>9.2	225				<1.6	(2.85)
19		8.3	225				<1.6	2.75
20		7.2	(245)				<1.6	2.70
21		6.9	265				<1.6	2.65
22		6.4	(295)				<1.6	2.50
23		6.0	(300)				<1.6	2.50

Time: 0.0°.

Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 51

Townsville, Australia (19.3°S, 146.7°E)

November 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		>8.0	310				1.8	
01		>7.0	335				1.5	
02		>7.0	350					
03		>7.0	340					
04		>6.5	340				1.4	----
05		>6.5	360			<1.40	1.8	
06	---	>6.5	280		110	2.30		----
07	---	>8.5	250	---	100	3.20	3.3	(2.25)
08	(580)	10.7	250		5.4	100	3.60	4.1
09	(600)	11.0	240		5.8	110	3.90	4.6
10	500	>11.5	230		6.7	110	4.00	4.8
11	460	>11.8	220		6.8	110	4.25	5.0
12	450	12.4	240		7.1	110	4.30	4.8
13	450	11.9	240		6.8	110	4.25	4.9
14	460	11.5	250		6.6	110	4.15	4.8
15	470	11.0	250		6.3	110	4.00	4.7
16	(490)	10.4	250		6.0	110	3.70	4.6
17	---	>10.0	260	---	110	3.10	4.6	----
18	---	>9.0	300		115	(2.20)	3.8	
19	---	---	350				3.2	
20	---	---	370				3.7	
21	---	---	350				3.4	
22	---	---	350				2.2	
23		>7.5	325					

Time: 150.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 53

Watheroo, W. Australia (30.3°S, 115.9°E)

November 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.8	<325				3.8	2.60
01		6.6	<330				3.8	2.50
02		6.3	(320)				3.3	2.40
03		6.0	<340				2.8	2.30
04		5.9	(335)				1.6	2.25
05	---	6.0	350		<250	1.70		2.40
06	(510)	7.0	270		3.9	110	2.60	2.70
07	(590)	7.8	245		4.9	105	3.25	3.5
08	555	7.6	240		5.4	100	3.75	4.0
09	580	7.5	<240		5.7	100	4.00	4.2
10	545	7.8	(230)		6.0	150	(4.10)	4.3
11	560	7.9	(240)		6.0	100	(4.20)	2.30
12	520	8.4	(220)		6.3	100	>4.00	2.30
13	530	8.4	<230		6.1	105	>4.00	2.30
14	500	7.8	<250		6.0	105	>4.00	4.3
15	530	8.2	(240)		5.9	105	4.00	4.3
16	550	7.6	240		5.5	100	3.75	4.0
17	(500)	7.8	250		5.0	100	3.25	3.8
18	---	7.9	275	---	105	2.50	2.9	2.65
19		>7.6	305		<200	1.75	1.8	2.50
20		7.6	305					2.40
21		7.7	320					2.40
22		7.4	325					2.40
23		>7.0	(325)				3.7	2.40

Time: 120.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 1 minute 45 seconds.

Table 50

Schwarzenburg, Switzerland (46.8°N, 7.3°E)

November 1957

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	6.7						2.8
01	300	6.5						2.8
02	300	6.1						2.8
03	300	6.1						2.85
04	270	5.8						3.0
05	260	5.3						3.0
06	240	4.8						3.0
07	240	5.6						3.1
08	210	9.5			100	2.2		3.5
09	200	13.4			100	2.6		3.4
10	200	14.8			100	3.0		3.3
11	200	15.5			100	3.3		3.2
12	200	15.0			100	3.4		3.1
13	200	14.8			100	3.3		3.0
14	200	14.3			100	3.2		3.0
15	210	14.3			100	2.9		3.1
16	210	14.0			100	2.4		3.1
17	210	12.7			100	2.3		3.1
18	210	10.8			---			(3.2)
19	230	9.2						3.2
20	220	8.4						3.1
21	240	7.4						3.0
22	270	7.2						3.1
23	270	7.1						2.9

Time: 15.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 52

Johannesburg, Union of S. Africa (26.2°S, 28.0°E)

November 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		7.5	285				1.9	2.55
01		6.5	(285)				<2.0	2.50
02		6.0	(300)				2.9	2.45
03		5.8	<305				2.5	2.45
04		5.6	<325				2.6	2.40
05		6.1	305			<1.8	<2.0	2.55
06		8.5	250			2.6	2.7	2.80
07		10.1	245			3.3		2.70
08		11.0	230			3.8		2.55
09	(430)	11.6	230	7.1		4.0		2.45
10	440	11.9	220	---		---	4.6	2.40
11	440	12.1	(215)	7.6		---	4.7	2.35
12	450	12.0	---	---		---	4.8	2.30
13	455	11.9	---	---		---	4.7	2.30
14	450	>11.7	(225)	---		---	4.7	2.30
15	445	>11.2	235	6.5		4.0		2.35
16	410	11.0	240	---		3.7	4.0	2.35
17	---	10.8	250	---		3.2	3.6	2.40
18	---	10.8	275	---		<2.4	3.0	2.50
19	---	10.6	280	---		<2.0	2.7	2.55
20	---	9.8	280	---			2.5	2.55
21	---	9.0	280	---			<2.2	2.55
22	---	8.5	295	---			<2.1	2.55
23	---	7.9	295	---			1.9	2.55

Time: 30.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 7 seconds.

Table 54

Hobart, Tasmania (42.9°S, 147.2°E)

November 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.5	350					2.35
01		5.9	340					2.30
02		5.8	360				2.8	2.30
03		5.5	360					3.0
04		4.8	400		---	---		3.0
05		5.5	320		---	2.00		2.40
06	---	>6.1	270	---	130	2.80		2.50
07	570	6.8	250	4.6	110	<3.30		2.45
08	600	7.2	250	5.2	110	3.65	3.8	2.35
09	560	>7.5	240	5.8	110	3.80	4.4	2.35
10	550	>7.5	240	5.8	110	---	4.5	2.30
11	550	7.9	240	6.3	---	---	4.5	2.30
12	580	7.8	230	6.1	110	---	4.4	2.30
13	550	>7.8	230	6.0	110	---	4.4	2.30
14	550	7.8	240	6.0	110	(4.05)	4.2	2.30
15	540	8.0	240	5.7	110	3.90	4.0	2.30
16	530	>7.8	250	5.4	110	3.70		2.30
17	500	7.8	250	4.8	120	3.30		2.35
18	---	>7.7	280	---	120	2.70	3.2	2.40
19		7.7	300					2.40
20		>7.5	330				3.4	2.35
21		(7.6)	340				3.3	2.40
22		>7.2	340				3.6	2.30
23		>7.0	340					2.30

Time: 150.0°E.

Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 55

Falkland Is. (51.7°S, 57.8°W)

November 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		9.6	350				3.1	2.20
01		9.5	350				2.7	2.20
02		9.1	350				2.3	2.15
03		8.8	380				1.8	2.10
04		9.2	330	---		1.80		2.00
05		10.1	275	---	125	2.40	2.6	2.00
06	500	10.7	250	5.3	110	3.00	3.7	2.00
07	540	10.7	250	5.8	105	3.40	4.2	2.10
08	540	11.0	245	6.2	105	3.70	5.0	2.10
09	465	11.4	240	6.4	105	3.90	6.0	2.20
10	460	11.9	245	6.7	105	4.00	6.1	2.20
11	450	11.4	235	6.6	105	4.10	5.2	2.20
12	450	11.5	240	6.7	105	4.20	5.2	2.25
13	450	11.4	240	6.6	105	4.15	5.1	2.30
14	450	10.6	250	6.5	105	4.00	4.9	2.30
15	450	9.8	250	6.2	105	3.80	4.2	2.35
16		9.5	250	---	105	3.55	4.4	2.40
17		9.2	255		110	3.10	4.4	2.45
18		8.9	280		120	2.40	4.0	2.45
19		8.8	300			1.90	3.8	2.35
20		9.0	335			---	3.7	2.20
21		9.4	350				3.3	2.10
22		9.6	360				4.0	2.10
23		9.7	370				3.3	2.15

Time: 60.0°W.

Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 57

Budapest, Hungary (47.4°N, 19.2°E)

October 1957

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00		335	7.0					2.74
01		310	6.8					2.90
02		310	6.5					2.90
03		320	6.3					2.86
04		300	6.0					2.95
05		290	5.6					3.00
06		290	6.4					3.04
07		250	9.5					3.26
08		245	11.0			140	2.4	3.30
09		240	11.5	240	4.2	130	2.8	3.30
10		240	12.0	240	4.7	125	3.2	3.30
11		245	12.2	240	5.2	120	3.4	3.30
12		260	12.2	240	6.2	120	3.4	3.19
13		300	12.2	240	6.5	120	3.6	2.97
14		260	11.8	240	5.8	120	3.3	3.19
15		260	11.8	245	5.4	125	3.1	3.25
16		260	11.3	---	---	130	2.6	3.19
17		260	10.7			120	2.4	3.19
18		260	10.2				2.6	3.19
19		265	9.4				2.8	3.13
20		270	8.7					3.13
21		295	8.0					2.97
22		310	7.6					2.92
23		320	7.1					2.84

Time: Local.

Sweep: 1.0 Mc to 20.0 Mc in 35 seconds.

Table 59

Sao Paulo, Brazil (23.5°S, 46.5°W)

October 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		14.3	270				<2.1	3.00
01		(14.0)	260				<2.1	(3.00)
02		(12.8)	240				<2.1	(2.90)
03		10.8	240				<2.1	2.85
04		9.3	250				<2.1	2.60
05		8.4	255				<2.1	2.55
06		9.9	260			2.40	<2.7	2.70
07		10.9	240			3.10		2.75
08		11.8	240			3.50		2.65
09		12.4	240			3.80		2.45
10		13.0	240			---		2.40
11		13.3	(250)			---		2.40
12		(13.6)	(250)			---		(2.30)
13		(13.5)	(255)			---		(2.25)
14		13.6	240			---		2.25
15		13.8	250			---		2.30
16		(13.4)	250			3.50		(2.30)
17		13.7	270			3.20		2.45
18		(13.8)	310			---	<2.7	(2.40)
19		(12.6)	400			---	<2.3	(2.25)
20		(12.0)	410			---	<2.2	(2.20)
21		(13.2)	350			---	<2.2	(2.40)
22		13.3	300			---	<2.1	2.75
23		13.8	280			---	<2.1	2.90

Time: 45.0°W.

Sweep: 1.75 Mc to 20.0 Mc in 2 minutes 30 seconds.

Table 56

Churchill, Canada (58.8°N, 94.2°W)

October 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		6.0	320		---		1.4	5.5
01		6.0	320		---		1.5	5.1
02		5.3	320		125	2.0		5.0
03		5.1	320		130	2.2		4.7
04		5.2	350		130	2.0		4.1
05		5.0	350		125	2.2		4.3
06		5.5	340		130	2.4		4.2
07		6.6	310		110	2.4		3.8
08		7.8	280		110	2.8		4.0
09	---	9.2	260	---	110	3.0		4.2
10	---	10.3	250	---	110	3.2		2.6
11	---	11.2	240	---	110	3.2	3.3	2.6
12	---	11.7	240	---	110	3.2		2.6
13	---	11.9	240	---	110	3.2		2.5
14	---	12.1	240	---	110	3.1		2.5
15	---	11.7	260	---	115	3.0		2.6
16	---	9.3	280	---	120	2.6	3.0	(2.6)
17		8.7	280		125	2.2	3.3	---
18		7.5	300		120	2.0	4.0	---
19		7.0	330		125	2.4	3.4	---
20		6.5	320		120	2.4	4.2	---
21		6.0	320		130	2.2	4.3	---
22		5.7	320		135	2.2	4.3	---
23		5.7	320		---	(1.8)	6.0	---

Time: 90.0°W.

Sweep: 1.0 Mc to 17.0 Mc in 16 seconds.

Table 58

Schwarzenburg, Switzerland (46.8°N, 7.3°E)

October 1957

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00		300	7.3					2.8
01		300	7.0					2.7
02		300	6.8					2.7
03		300	6.3					2.7
04		280	6.0					2.85
05		260	5.7					2.9
06		240	5.0					3.0
07		230	7.7			100	2.1	3.3
08		210	9.6			100	2.5	3.5
09		210	12.6			100	3.0	3.5
10		200	13.5			100	3.3	3.3
11		210	13.9			100	3.5	4.0
12		200	14.0			100	3.6	4.3
13		210	13.4			100	3.6	3.0
14		210	13.0			100	3.5	3.0
15		220	13.0			100	3.3	3.0
16		220	12.3			100	2.8	3.05
17		220	10.9			100	2.4	2.8
18		240	10.2					2.4
19		230	9.2					3.2
20		230	8.5					3.15
21		240	8.0					3.0
22		260	8.0					3.0
23		270	7.2					3.0

Time: 15.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 60

Meanook, Canada (54.6°N, 113.3°W)

September 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		4.7	290					3.7
01		4.4	300					
02		4.6	330					3.5
03		4.6	340					4.1
04		4.6	330					5.7
05		4.6	320					4.5
06	---	4.7	300	---	---	---		
07	---	5.5	250	---	100		2.4	
08	---	6.3	230	---	100		3.0	
09	(460)	6.8	220	4.9	100		3.3	
10	(470)	7.4	210	5.0	100		3.5	
11	420	7.8	200	5.1	100		3.6	
12	410	8.1	200	5.4	100		3.8	
13	(420)	8.3	220	5.4	100		3.8	
14	(430)	8.6	220	5.3	100		3.7	
15	(410)	8.4	220	(5.0)	100		3.5	
16	---	8.3	230	(4.7)	100		3.2	
17	---	8.2	240	---	100		2.9	
18	---	8.0	250		110		2.4	
19	---	7.6	250		100		2.0	
20	---	6.6	240					
21	---	6.4	250					
22	---	5.8	240					
23	---	5.0	280					

Time: 105.0°W.

Sweep: 1.6 Mc to 20.0 Mc in 15 seconds.

Table 61

Chimbote, Peru (9.1°S, 78.6°W)								
September 1957								
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		8.8	240					2.75
01		8.3	240					2.65
02		8.0	240					2.90
03		7.4	240					3.00
04		6.6	240					3.00
05		6.2	245				(1.7)	3.00
06		6.7	275					2.75
07		10.0	250		121	2.75	4.0	2.90
08		12.4	240		119	3.50		2.75
09		13.6	230		117	3.90		2.55
10		13.6	220		119	4.15	7.1	2.35
11		13.6	220		115	4.30	8.0	2.20
12		12.8	215		113	4.40	8.1	2.05
13		(12.2)	210		117	4.30	8.2	2.05
14		(11.8)	215		115	4.20	8.0	(2.00)
15		(11.5)	(225)		117	3.90	7.5	2.00
16		(11.5)	240		115	3.50	6.2	2.00
17		11.0	260		119	2.95	3.2	2.05
18		10.6	295			2.10	4.5	2.10
19		(9.8)	420				(3.2)	(2.00)
20		9.2	440					2.10
21		(10.0)	(360)					(2.30)
22		(10.0)	270					(2.60)
23		9.8	(250)					2.65

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 63

Svalbard, Norway (78.2°N, 15.7°E)								
August 1957								
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	---	5.2	270	----	---	1.75	3.2	2.65
01	---	5.0	280	----	---	2.00	2.3	2.70
02	---	5.0	275	----	110	2.9	(2.60)	(2.60)
03	---	5.0	265	----	110	2.20	2.4	(2.60)
04	---	5.5	270	----	110	2.60	2.9	(2.60)
05	---	5.2	265	----	110	2.60	3.0	(2.65)
06	G	5.5	260	4.10	110	2.80	3.2	2.50
07	---	6.2	250	----	110	2.80	3.0	(2.75)
08	(445)	6.4	245	----	110	2.95	3.2	(2.80)
09	415	6.7	245	4.50	110	3.15	3.2	2.55
10	400	7.0	235	----	110	3.10		2.65
11	(435)	6.8	230	4.70	110	3.10	3.1	2.65
12	(450)	6.4	225	----	105	3.10		(2.80)
13	(480)	6.4	240	4.60	105	3.10		(2.70)
14	---	6.3	240	----	110	3.20		(2.80)
15	---	6.9	240	----	110	3.00	3.3	(2.80)
16	(360)	6.6	250	----	110	2.95	3.4	2.80
17	---	6.5	240	----	110	2.75	3.5	2.85
18	---	6.6	245	----	110	2.60	3.3	2.70
19	---	6.4	250	----	110	2.40	3.2	(2.80)
20	---	5.9	260	----	---	2.20	3.0	2.80
21	---	5.9	275	----	110	2.20	3.0	(2.65)
22	---	5.6	270	----	---	2.20	2.5	2.80
23	---	5.0	265	----	---	3.0		(2.70)

Time: 15.0°E.
Sweep: 0.68 Mc to 24.6 Mc in 5 minutes, automatic operation.

Table 65

Svalbard, Norway (78.2°N, 15.7°E)								
July 1957								
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	(430)	5.4	245	3.80	110	2.50	3.2	(2.70)
01	(330)	5.3	245	----	110	2.50	3.2	(2.70)
02	(420)	4.8	250	3.75	110	2.55	3.2	(2.60)
03	480	5.2	240	3.80	110	2.70	3.2	2.40
04	470	5.6	240	4.00	110	2.75	3.2	2.55
05	490	5.4	255	4.15	105	3.10	3.2	2.40
06	500	5.6	245	4.30	105	3.15	3.7	2.45
07	470	6.0	245	4.55	105	3.35	3.5	2.40
08	445	6.4	240	4.80	105	3.30	4.1	2.55
09	450	6.8	225	4.90	100	3.30	3.5	2.55
10	440	6.8	230	5.00	100	3.35	4.5	2.50
11	440	6.6	225	5.00	100	3.35	3.7	2.55
12	445	6.4	215	4.90	100	3.30	4.3	2.60
13	465	6.2	220	4.90	100	3.30	4.0	2.50
14	440	6.4	220	4.90	100	3.30	3.6	2.60
15	(440)	6.3	230	4.80	105	3.30	4.0	2.60
16	(460)	6.3	225	----	105	3.25	4.1	(2.50)
17	(460)	6.2	230	----	105	3.10	4.1	2.60
18	(415)	6.1	235	4.60	105	3.00	6.6	2.70
19	---	6.3	240	----	105	2.80	4.5	(2.65)
20	(425)	6.1	240	----	110	2.70	4.0	(2.55)
21	---	6.1	250	----	110	2.60	4.2	(2.75)
22	---	6.0	260	----	110	2.55	3.6	(2.60)
23	(300)	5.2	250	----	110	2.45	3.1	----

Time: 15.0°E.
Sweep: 0.68 Mc to 24.6 Mc in 5 minutes, automatic operation.

Table 62

Macquarie I. (54.5°S, 159.0°E)								
September 1957								
Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		---	290				3.7	---
01		(4.6)	300				3.7	---
02		(4.2)	300				3.9	(2.5)
03		(4.4)	280				1.7	(2.5)
04		4.2	280				2.0	2.5
05		(4.9)	280				1.5	2.7
06		6.6	250		110	2.3		2.8
07		7.0	240		110	2.8		2.85
08		7.6	240		110	3.2		2.9
09		7.6	230		110	3.4		2.7
10		8.2	230		110	3.6		2.75
11		8.7	220		110	3.7		2.6
12		>9.0	220		110	3.6		2.7
13		>8.0	220		110	3.6		2.7
14		9.0	220		110	3.4		2.7
15		>8.5	240		110	3.2		(2.65)
16		>7.5	250		110	2.7		(2.7)
17		(7.2)	250		---	2.0	2.5	(2.7)
18		>7.5	250		---	---	3.0	---
19		---	260				3.8	---
20		>6.0	280				3.4	---
21		---	290				3.7	---
22		---	300				3.8	---
23		---	(300)				4.0	---

Time: 150.0°E.
Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 64

Paramaribo, Surinam (5.8°N, 55.2°W)								
August 1957								
Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	325	11.2					2.9	2.50
01	300	11.5					3.0	2.60
02	300	11.7						2.70
03	270	11.0						2.80
04	250	9.8						2.90
05	255	9.0						2.80
06	260	8.4						2.90
07	250	8.2					2.2	2.90
08	230	7.7						2.95
09	230	6.7					2.4	3.00
10	240	7.3			---	2.3	3.5	3.05
11	225	8.7	---	---	100	3.0	3.8	3.00
12	(220)	9.7	210	---	100	3.6		2.80
13	(380)	11.0	215	6.1	100	3.9		2.65
14	340	12.4	215	6.2	100	4.1	4.4	2.65
15	350	13.0	210	6.1	100	4.2		2.65
16	360	13.0	210	6.0	105	4.2	4.6	2.60
17	390	12.9	210	6.1	110	4.2	4.8	2.55
18	400	12.9	210	6.3	105	4.0	4.5	2.55
19	360	12.6	220	6.0	100	3.8	4.2	2.60
20	(360)	12.4	225	6.0	100	3.4	4.2	2.55
21	(305)	11.4	250	---	100	2.7	4.4	2.50
22	300	10.7	---	---	---	1.9	3.2	2.50
23	320	10.9					3.2	2.50

Time: 0.0°.
Sweep: 1.4 Mc to 20.0 Mc in 40 seconds.

Table 66

Meanook, Canada (54.6°N, 113.3°W)								
July 1957								
Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		5.2	280				3.9	2.6
01		5.0	300				4.0	(2.6)
02		5.0	330				3.5	(2.55)
03		4.9	300				4.0	----
04		4.9	300				4.2	(2.8)
05	(390)	5.0	270	3.5	110	2.1	5.0	(2.65)
06	390	5.5	230	4.0	100	2.7	4.3	2.7
07	400	6.0	220	4.5	100	3.0	5.0	2.6
08	440	6.3	210	4.9	100	3.3	5.0	2.5
09	450	6.5	200	5.0	100	3.6	4.5	2.5
10	460	6.5	200	5.0	100	3.8	4.0	2.5
11	490	6.7	200	5.1	100	3.9		2.5
12	480	6.8	200	5.2	100	4.0		2.5
13	490	6.8	200	5.2	100	4.0		2.5
14	480	6.8	210	5.2	100	4.0		2.5
15	460	6.7	210	5.1	100	3.9		2.5
16	460	6.5	210	5.1	100	3.6		2.5
17	420	6.7	210	5.0	100	3.3		2.6
18	390	6.6	230	4.9	100	3.0		2.7
19	(360)	6.7	240	4.0	100	2.8	3.9	2.7
20		6.8	260		110	2.2	4.0	2.8
21		6.5	260		---	---		2.8
22		6.2	260				3.0	2.8
23		5.6	270				3.0	2.7

Time: 105.0°W.
Sweep: 1.6 Mc to 20.0 Mc in 15 seconds.

Table 67

Christchurch, New Zealand (43.6°S, 172.8°E)

June 1957

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00		5.0	290				<1.6	2.55
01		4.9	300				<1.7	2.50
02		4.8	300				<1.5	2.50
03		4.8	300				<1.5	2.60
04		4.8	280				<1.4	2.70
05		4.4	270				<1.6	2.70
06		4.2	250				<1.5	2.70
07		3.8	260				<1.5	2.80
08		6.4	250		---	1.8		3.00
09		9.5	240		---	2.5		3.10
10		11.3	240		100	3.0	3.0	3.10
11		12.2	230		105	3.2		3.05
12		12.4	240		---	3.3	3.7	3.00
13		12.3	240		---	3.2		2.95
14		12.5	240		---	3.2	3.3	2.95
15		11.9	240		---	3.0		2.95
16		11.6	240		---	2.5	2.9	3.00
17		10.9	240		---	---		2.95
18		8.9	240				<2.2	2.80
19		8.1	250				<1.9	2.90
20		7.0	250				<1.8	2.80
21		6.0	250				<1.8	2.70
22		5.5	280				<1.9	2.60
23		5.4	290				<2.2	2.60

Time: 180.0°E.

Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 69

Wakkanai, Japan (45.4°N, 141.7°E)

November 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	5.2						
01	300	5.0					2.1	
02	300	5.0					2.2	
03	300	5.0					2.2	
04	290	4.9					2.1	
05	280	4.9						
06	250	6.0						
07	230	9.5						
08	220	12.2						
09	220	12.8						
10	230	13.0						
11	230	13.0						
12	230	12.8						
13	230	12.8						
14	230	12.7						
15	230	12.3						
16	230	11.9						
17	230	10.5						
18	230	9.0						
19	240	7.8						
20	240	6.8						
21	270	5.9						
22	290	5.8						
23	300	5.5						

Time: 135.0°E.

Sweep: 1.0 Mc to 22.0 Mc in 1 minute.

Table 71

Tokyo, Japan (35.7°N, 139.5°E)

November 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	5.8						2.6
01	290	5.4						2.6
02	280	5.3					2.0	2.6
03	280	5.0					2.3	2.6
04	280	4.8					1.8	2.5
05	320	4.6						2.5
06	270	6.2			---	---		2.7
07	240	10.8			130	2.4		3.1
08	240	13.0	---	---	120	3.0	3.2	3.0
09	240	14.1	---	---	120	3.3		2.9
10	240	14.6	230	---	120	3.4		2.9
11	240	14.4	230	---	110	3.6		2.75
12	240	14.4	---	---	110	3.5		2.7
13	240	14.1	---	---	120	3.5		2.6
14	250	14.0	240	---	120	3.3		2.6
15	250	13.5	---	---	120	3.0	3.2	2.7
16	250	12.5			130	2.3	3.2	2.8
17	240	11.6					3.2	2.8
18	250	10.4					2.3	2.8
19	250	9.2					2.4	2.8
20	250	8.0						2.75
21	250	7.0						2.7
22	270	6.2						2.65
23	290	6.0						2.6

Time: 135.0°E.

Sweep: 1.0 Mc to 17.2 Mc in 2 minutes.

Table 68

Brisbane, Australia (27.5°S, 152.9°E)

February 1957

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00		8.5	280				(2.1)	2.60
01		7.9	260				(2.3)	2.55
02		7.5	270				1.6	2.55
03		7.4	295					2.50
04		7.0	290			---		2.50
05		7.0	310			E		2.55
06		7.8	260			2.2		2.70
07	---	8.5	240	---		3.0	3.4	2.60
08	---	>8.5	230	---		3.5	4.0	(2.55)
09	---	>8.5	230	---		3.8	4.3	(2.60)
10	(410)	(9.4)	220	5.6		4.0	4.8	(2.50)
11	(380)	>8.5	215	6.2		>4.0	4.5	(2.55)
12	365	(10.4)	220	6.0		4.2	4.6	(2.50)
13	360	(10.4)	220	6.4		4.2		(2.55)
14	(355)	(9.7)	220	6.3		>4.0	4.4	(2.55)
15	(400)	>8.5	220	6.0		3.9	4.3	(2.50)
16	---	(8.7)	230	---		3.5	4.0	(2.55)
17		>8.5	240			3.0	3.4	(2.60)
18		>8.5	260			<2.0	3.3	2.65
19		>8.5	260			E	2.4	(2.50)
20		>8.5	300				(2.5)	2.50
21		>8.5	300					2.50
22		8.6	300					2.50
23		>8.5	285					2.60

Time: 150.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 70

Akita, Japan (39.7°N, 140.1°E)

November 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	5.4						2.6
01	290	5.2						2.2
02	300	5.1						2.4
03	300	5.0						2.5
04	290	4.8						2.2
05	300	4.9						2.1
06	250	5.9						
07	240	10.0						
08	240	12.5						
09	240	13.6						
10	240	14.0						
11	240	14.1					3.4	
12	240	13.6						
13	240	13.5						
14	240	13.1						
15	240	12.7					3.5	
16	240	12.0					3.5	
17	240	10.6					3.5	
18	250	9.4					3.0	
19	240	8.0					3.0	
20	250	7.0					2.7	
21	250	6.0					2.0	
22	290	5.8						
23	290	5.6						

Time: 135.0°E.

Sweep: 0.85 Mc to 22.0 Mc in 2 minutes.

Table 72

Yamagawa, Japan (31.2°N, 130.6°E)

November 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	7.4						2.3
01	260	6.8						2.3
02	250	6.4						2.3
03	250	5.8						2.3
04	250	5.3						2.3
05	290	4.2						2.3
06	290	4.6						2.3
07	240	8.7						2.4
08	240	12.3						
09	240	14.2						
10	240	14.6					3.8	
11	240	14.6						
12	240	14.5					4.8	
13	240	14.5						
14	240	14.4						
15	240	14.0						
16	240	13.7					3.8	
17	240	13.5					3.1	
18	240	12.9					2.7	
19	250	11.8					2.4	
20	240	11.2					2.4	
21	230	10.2					2.3	
22	240	9.0					2.3	
23	250	8.4					2.3	

Time: 135.0°E.

Sweep: 1.0 Mc to 22.0 Mc in 1 minute.

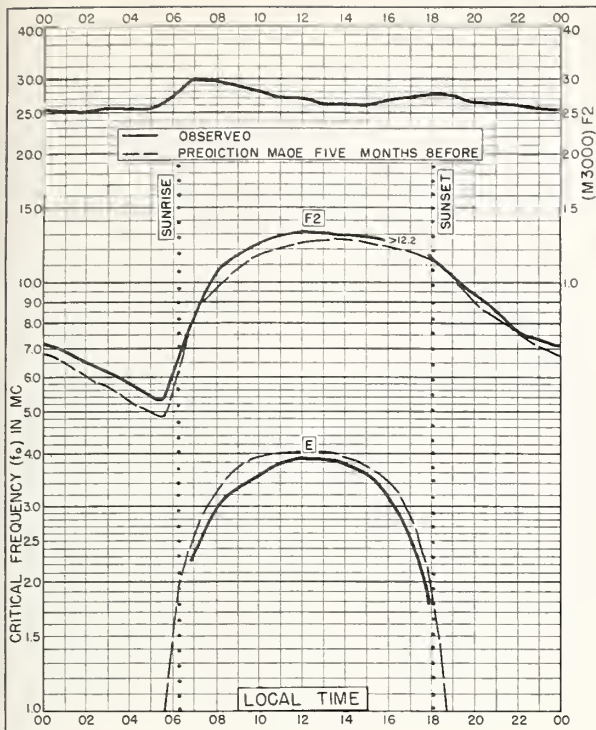


Fig. 1. WASHINGTON, D. C.
38.7°N, 77.1°W
MARCH 1958

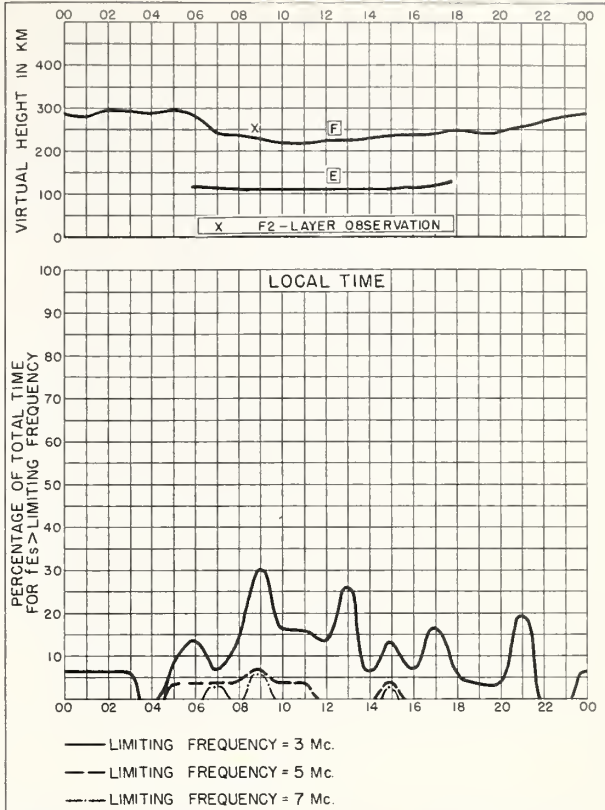


Fig. 2. WASHINGTON, D. C.
MARCH 1958

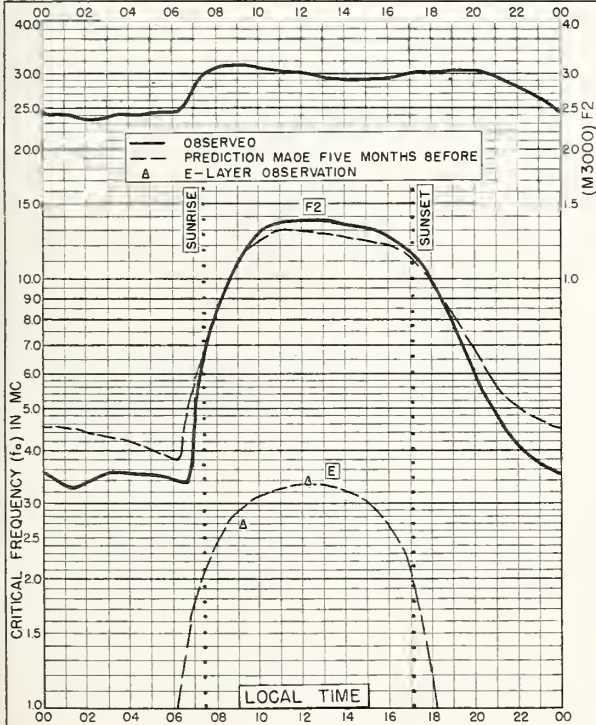


Fig. 3. ADAK, ALASKA
51.9°N, 176.6°W
FEBRUARY 1958

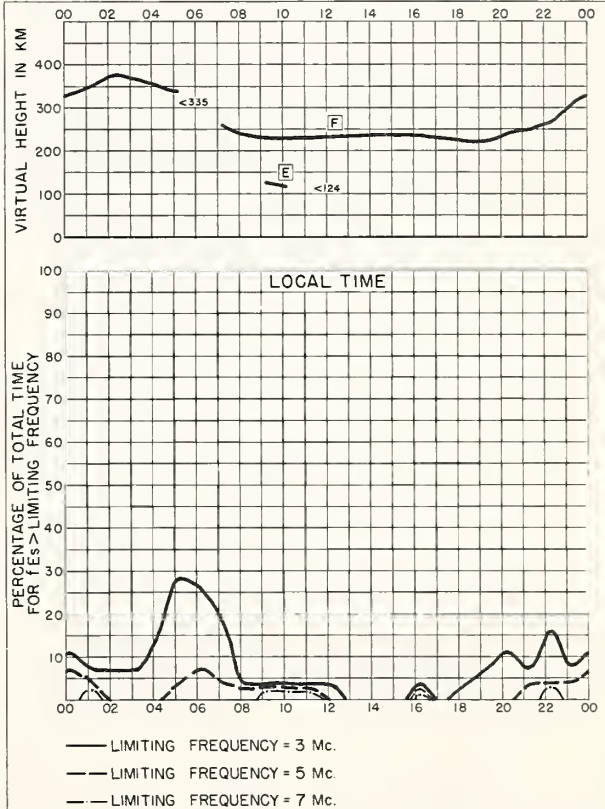


Fig. 4. ADAK, ALASKA
FEBRUARY 1958

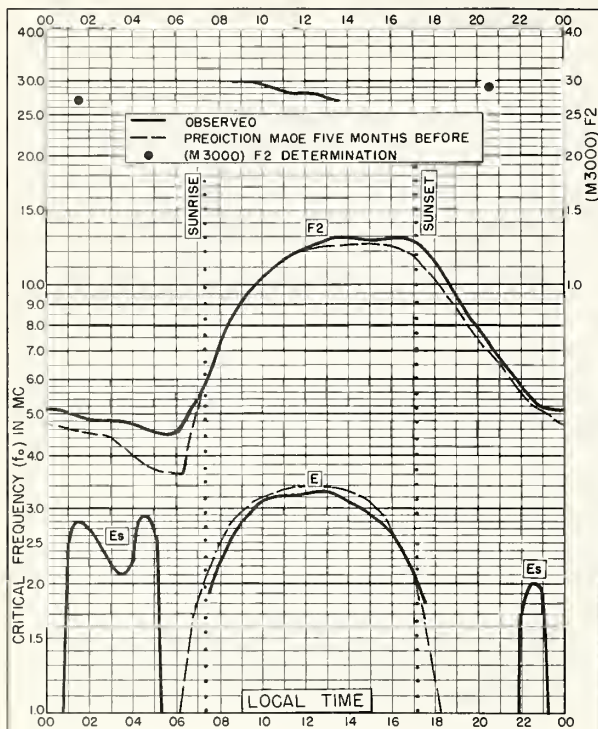


Fig. 5. WINNIPEG, CANADA
49.9°N, 97.4°W FEBRUARY 1958

Commerce-Broadband-Broadband, Colo. NBS 503

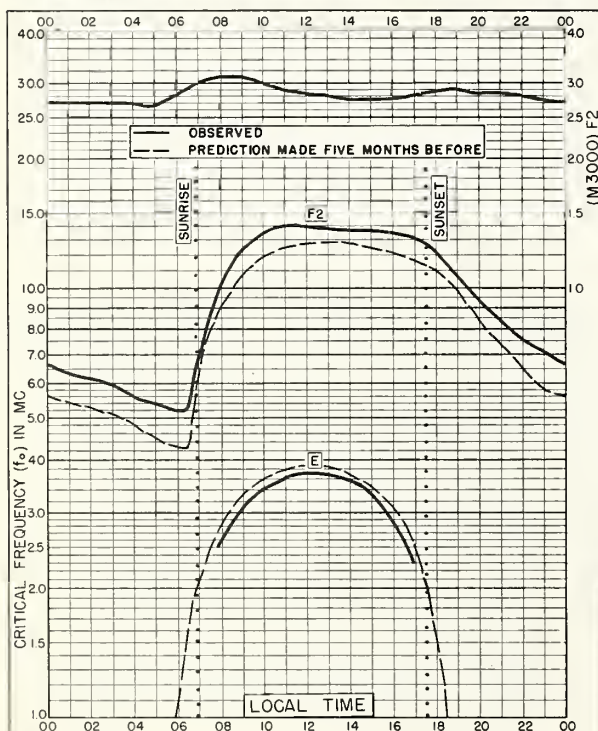


Fig. 7. WASHINGTON, D. C.
38.7°N, 77.1°W FEBRUARY 1958

Commerce-Broadband-Broadband, Colo. NBS 503

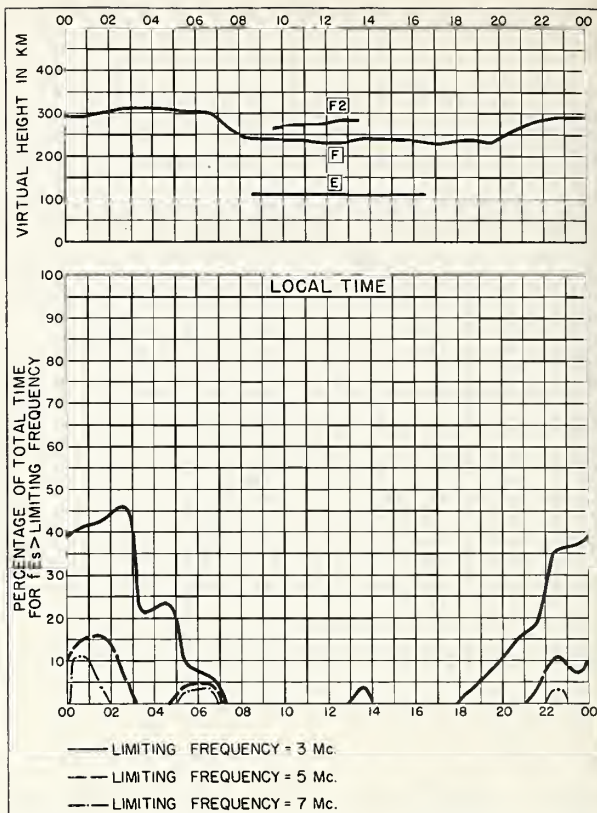


Fig. 6. WINNIPEG, CANADA FEBRUARY 1958

Commerce-Broadband-Broadband, Colo. NBS 490

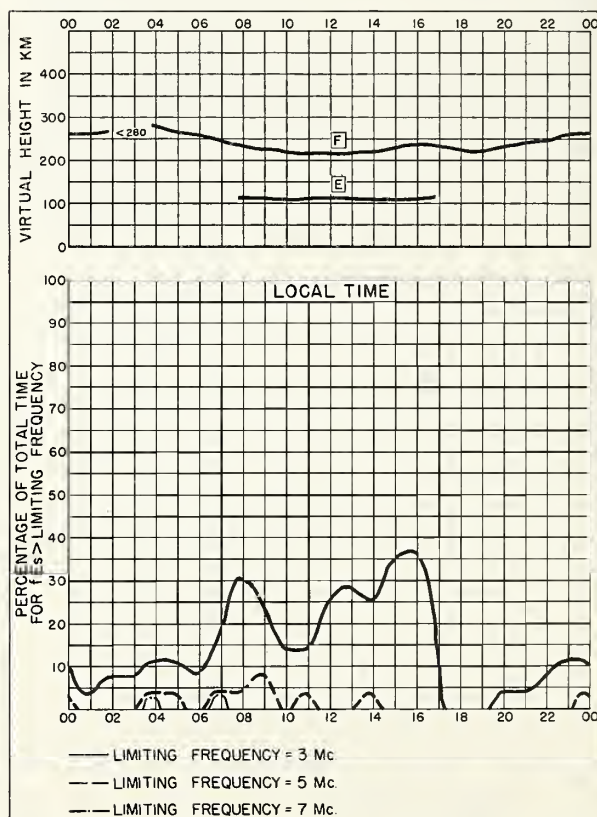


Fig. 8. WASHINGTON, D. C. FEBRUARY 1958

Commerce-Broadband-Broadband, Colo. NBS 490

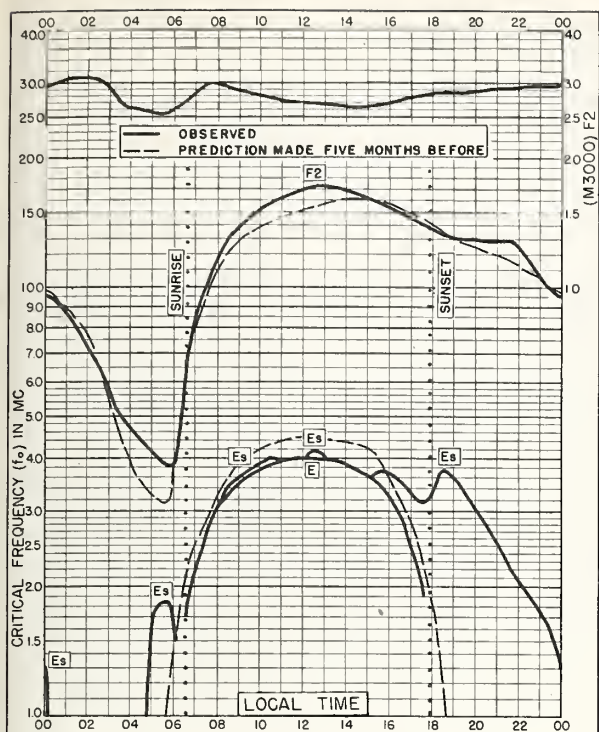


Fig. 9. MAUI, HAWAII
20.8°N, 156.5°W FEBRUARY 1958

Commonwealth Radio, Inc., Calif.

NBS 503

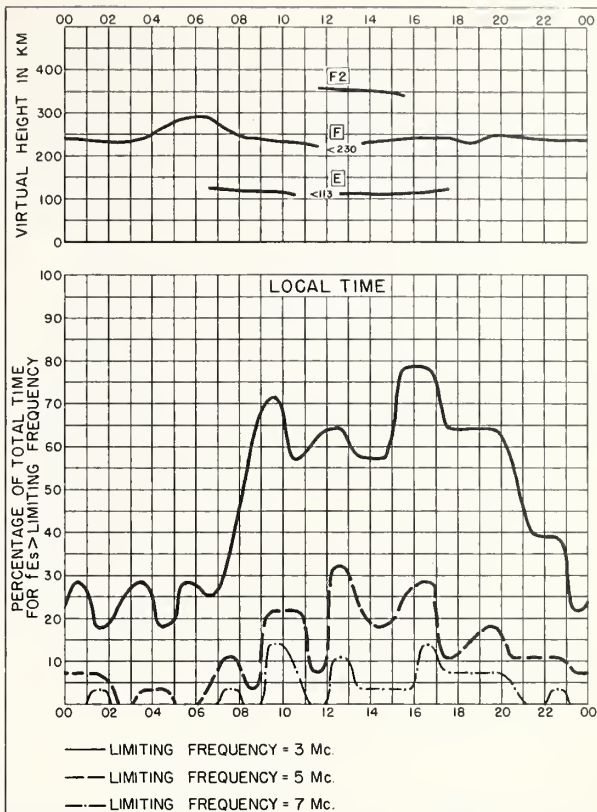


Fig. 10. MAUI, HAWAII FEBRUARY 1958

Commonwealth Radio, Inc., Calif.

NBS 490

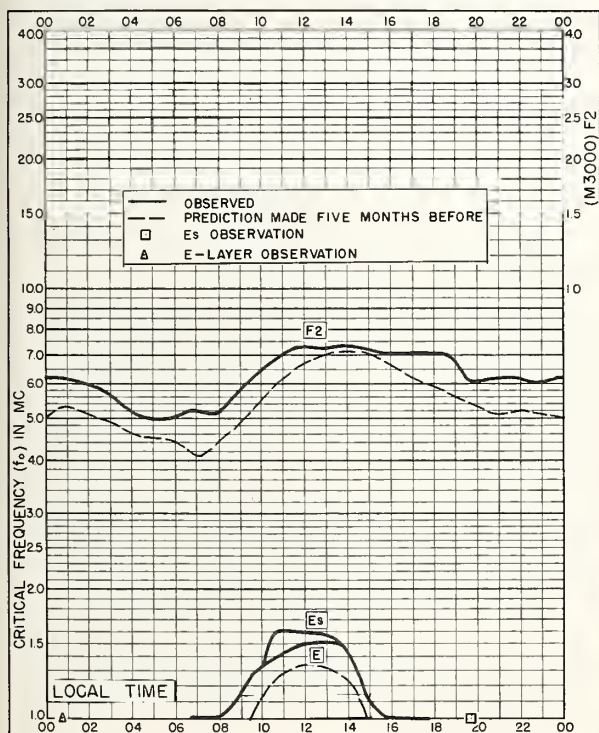


Fig. 11. RESOLUTE BAY, CANADA
74.7°N, 94.9°W JANUARY 1958

Commonwealth Radio, Inc., Calif.

NBS 503

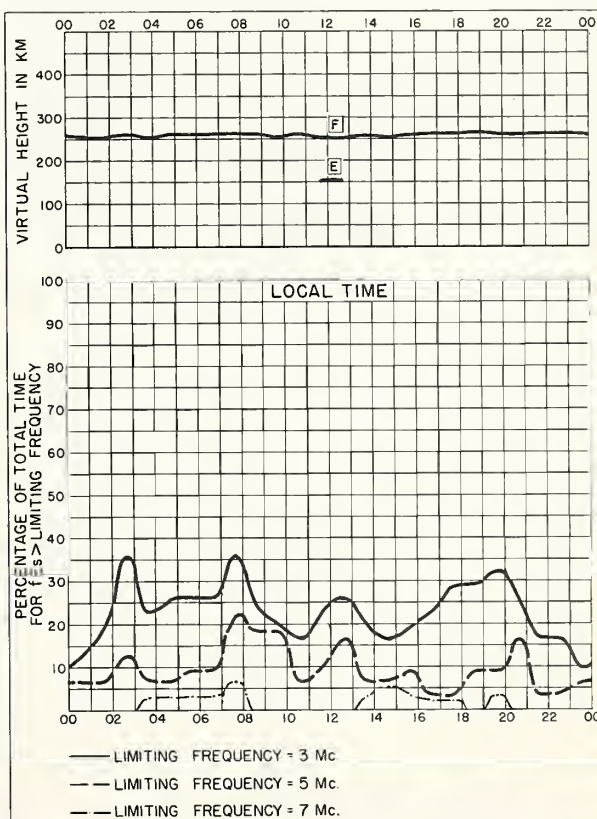


Fig. 12. RESOLUTE BAY, CANADA JANUARY 1958

Commonwealth Radio, Inc., Calif.

NBS 490

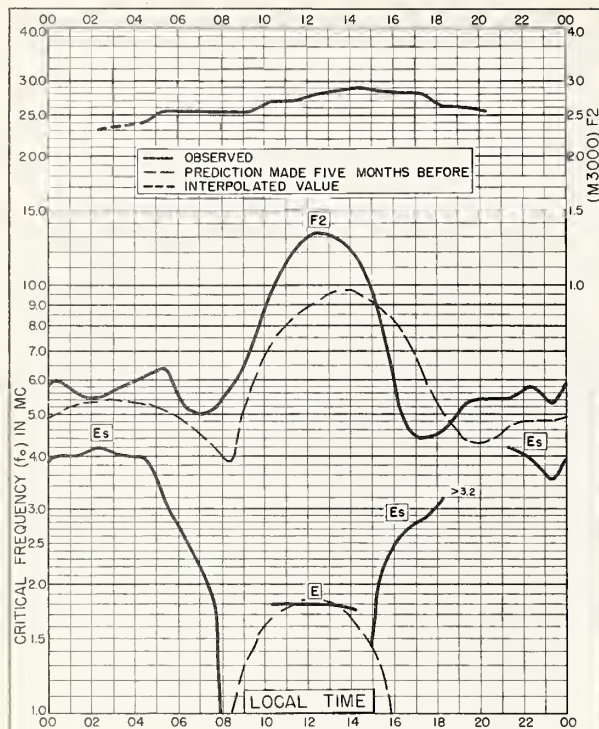


Fig. 13. TROMSØ, NORWAY
69.7°N, 19.0°E

JANUARY 1958

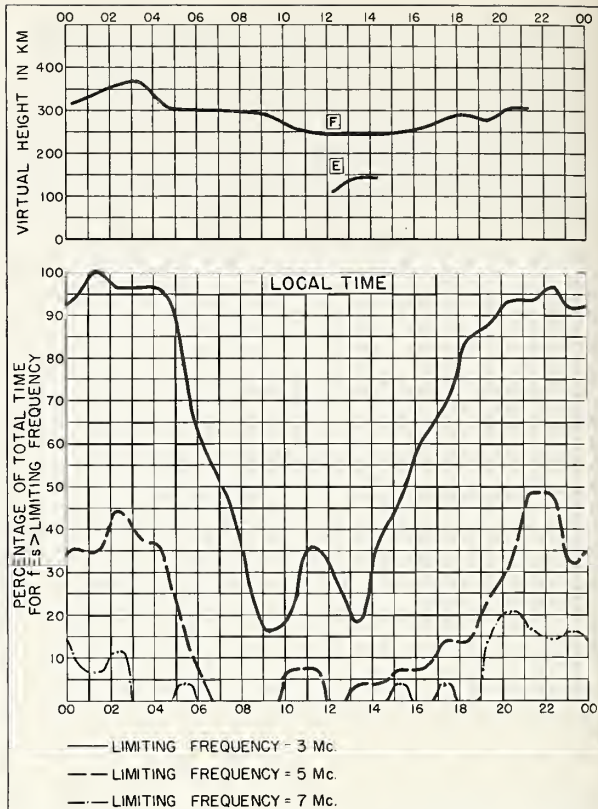


Fig. 14. TROMSØ, NORWAY

JANUARY 1958

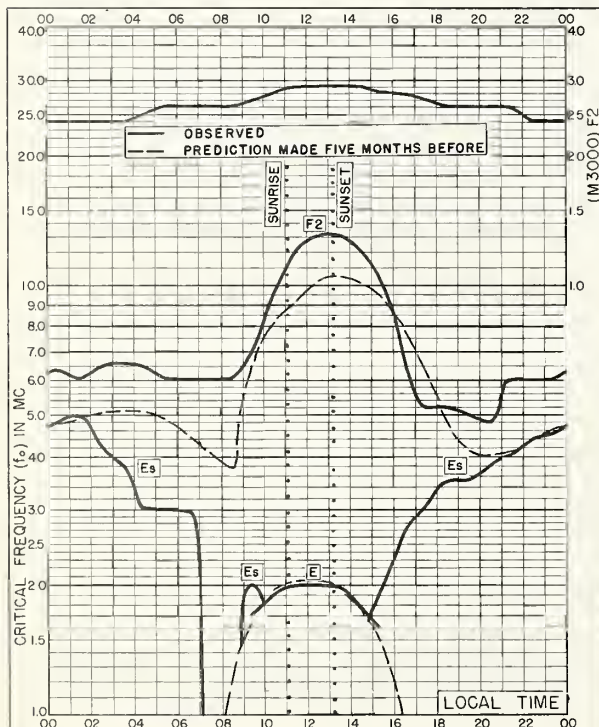


Fig. 15. KIRUNA, SWEDEN
67.8°N, 20.3°E

JANUARY 1958

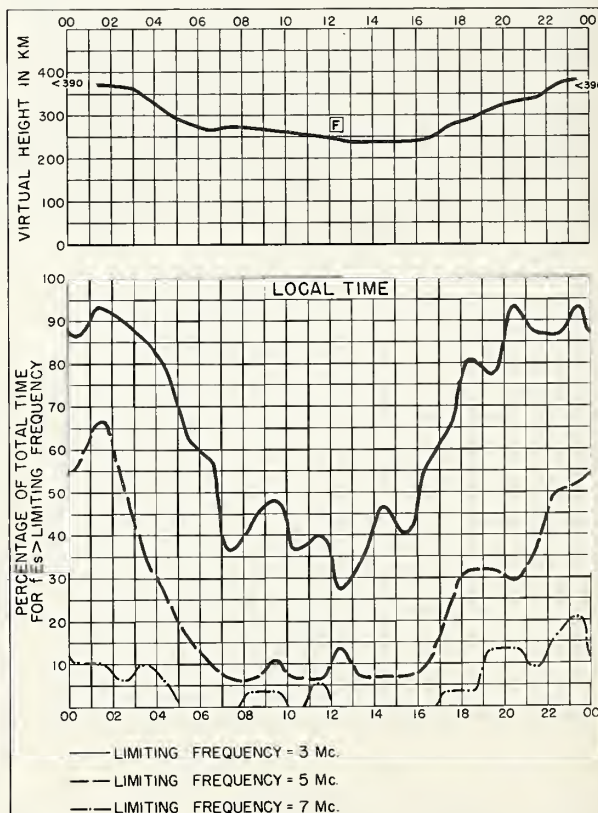


Fig. 16. KIRUNA, SWEDEN

JANUARY 1958

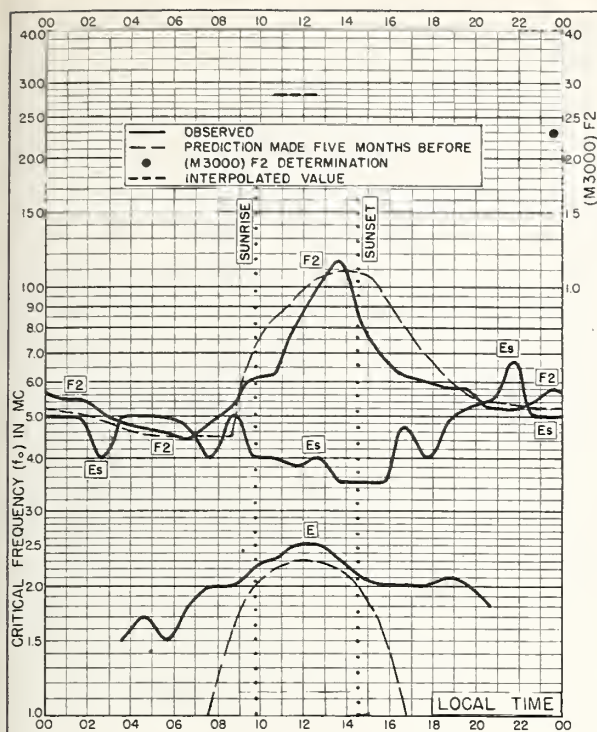


Fig. 17. BAKER LAKE, CANADA
64.3°N, 96.0°W
JANUARY 1958

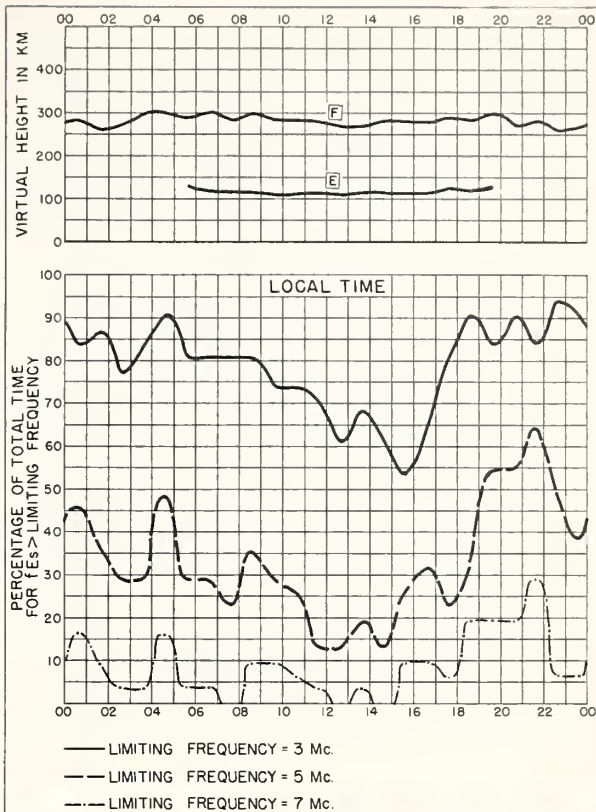


Fig. 18. BAKER LAKE, CANADA
JANUARY 1958

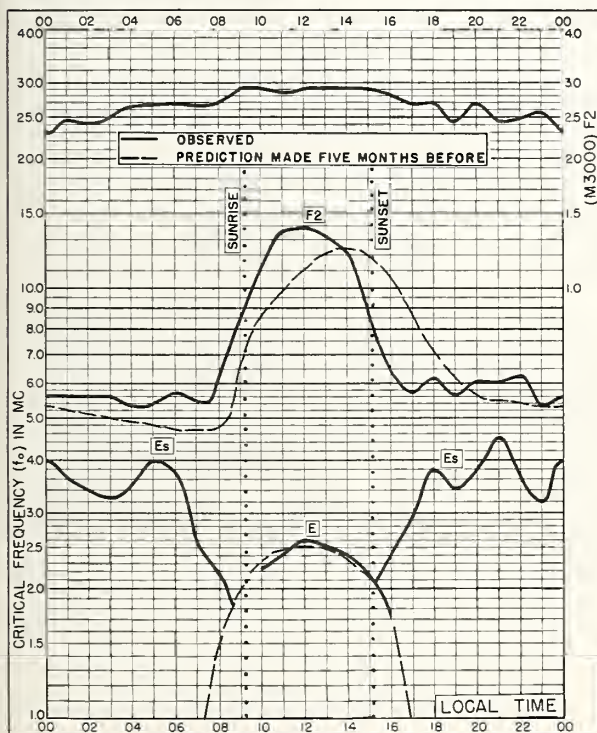


Fig. 19. NARSARSSUAK, GREENLAND
61.2°N, 45.4°W
JANUARY 1958

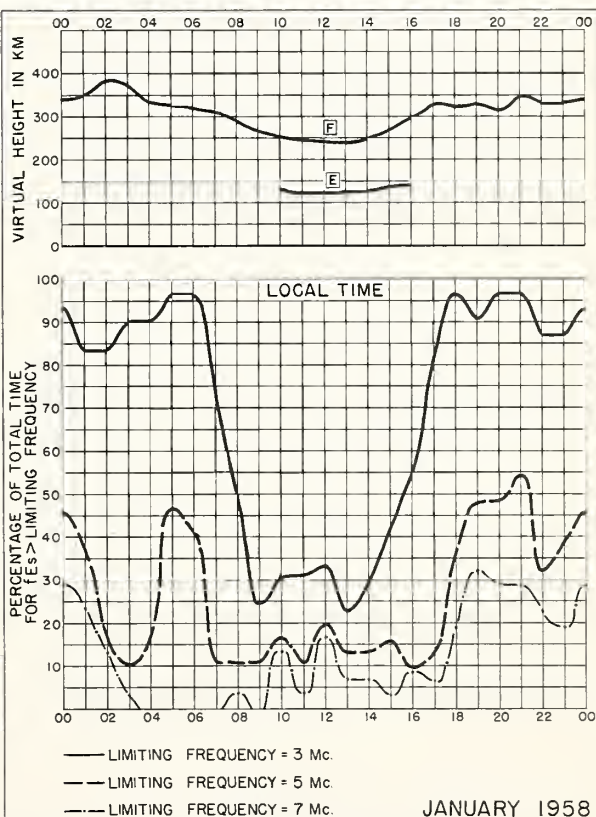


Fig. 20. NARSARSSUAK, GREENLAND
JANUARY 1958

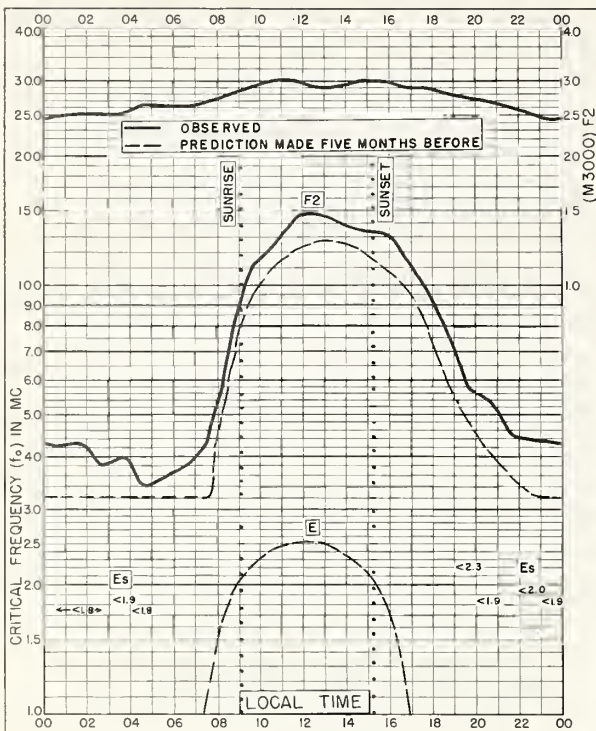


Fig. 21. NURMIJARVI, FINLAND
60.5°N, 24.6°E JANUARY 1958

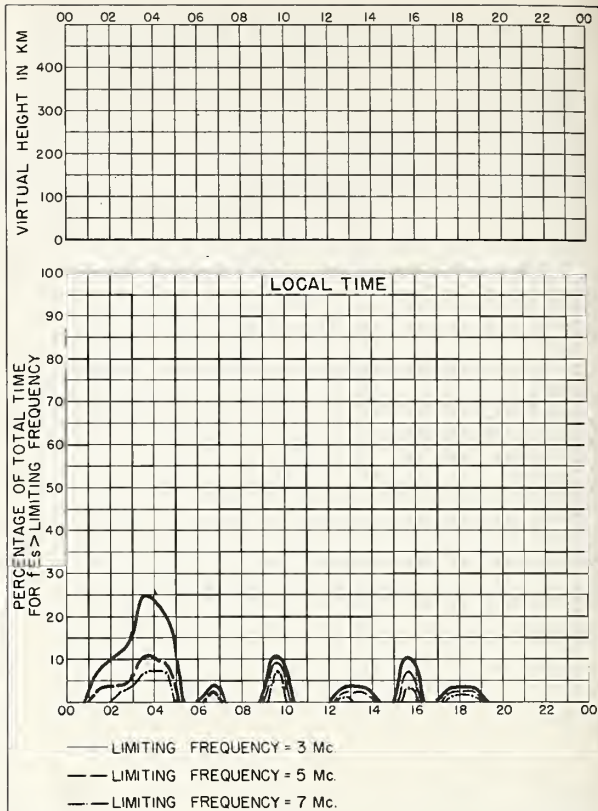


Fig. 22. NURMIJARVI, FINLAND JANUARY 1958

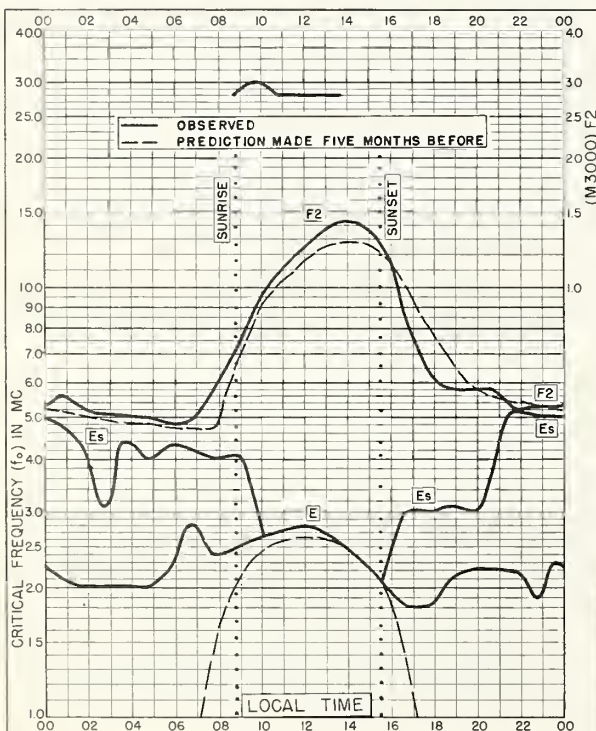


Fig. 23. CHURCHILL, CANADA
58.8°N, 94.2°W JANUARY 1958

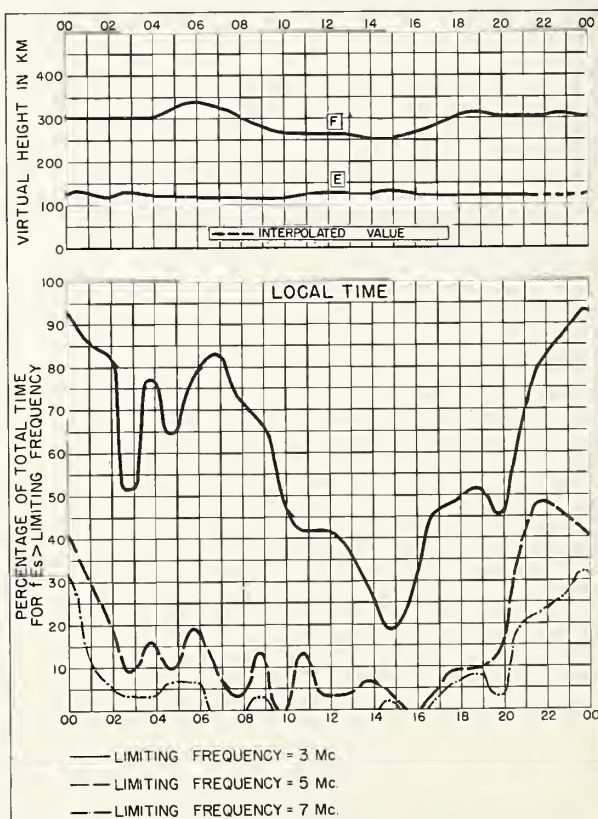


Fig. 24. CHURCHILL, CANADA JANUARY 1958

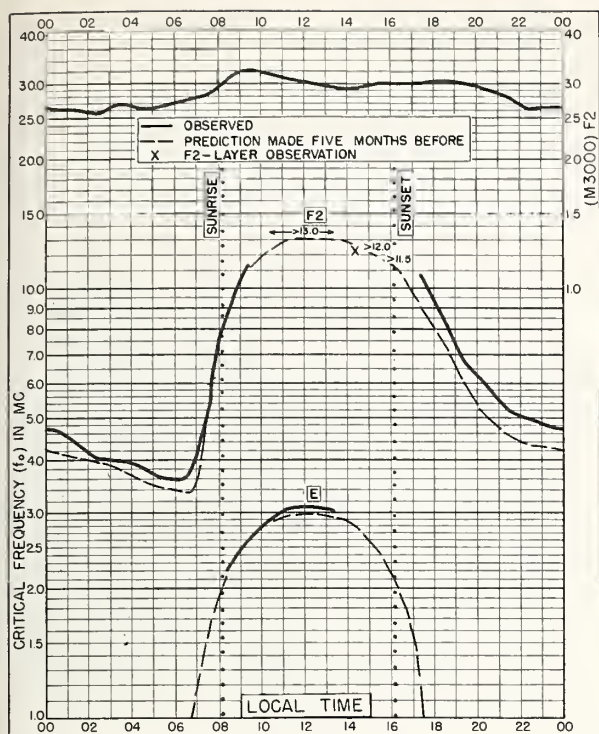


Fig. 25. De BILT, HOLLAND
52.1°N, 5.2°E

JANUARY 1958

Comma-Standard Encoder, Code

NBS 503

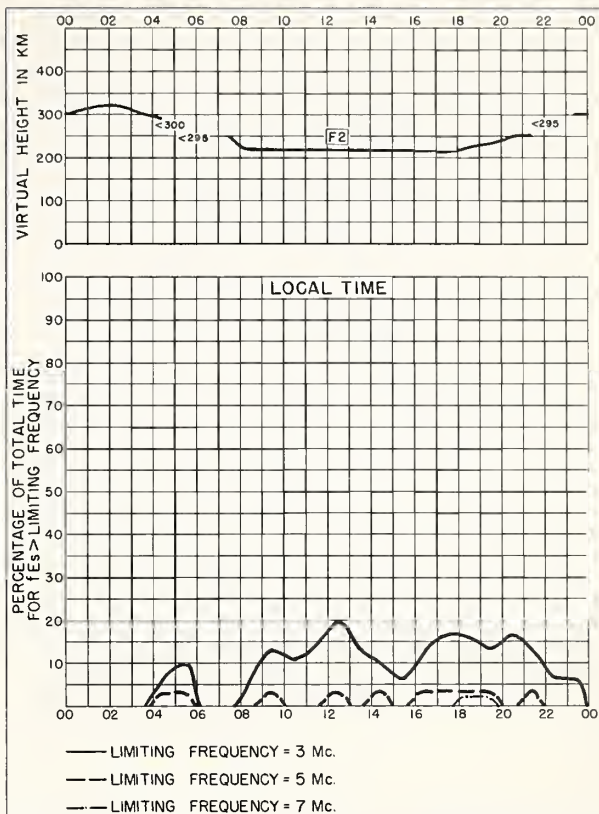


Fig. 26. De BILT, HOLLAND

JANUARY 1958

Comma-Standard Encoder, Code

NBS 490

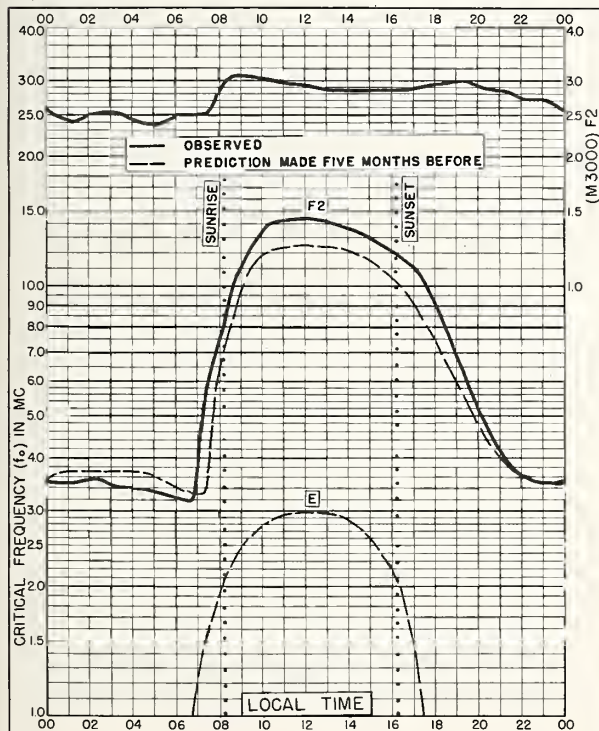


Fig. 27. ADAK, ALASKA
51.9°N, 176.6°W

JANUARY 1958

Comma-Standard Encoder, Code

NBS 503

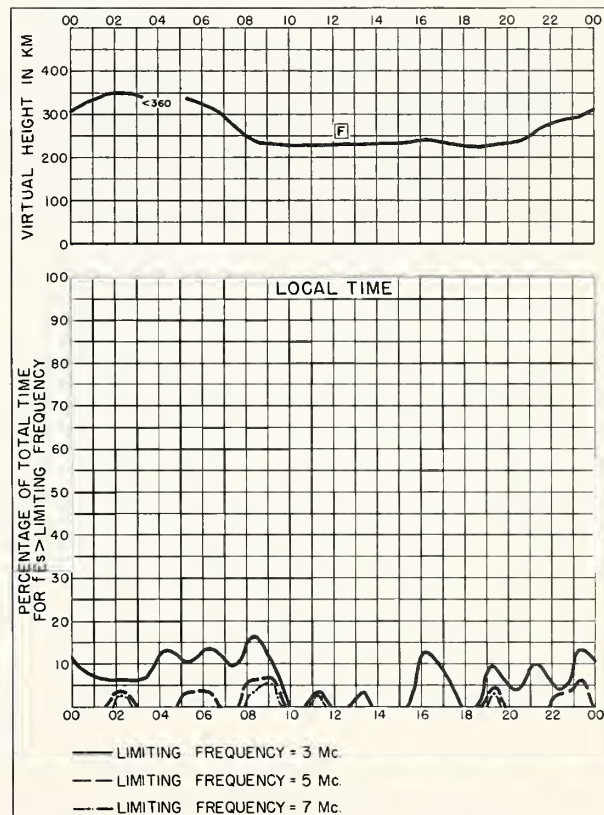


Fig. 28. ADAK, ALASKA

JANUARY 1958

Comma-Standard Encoder, Code

NBS 490

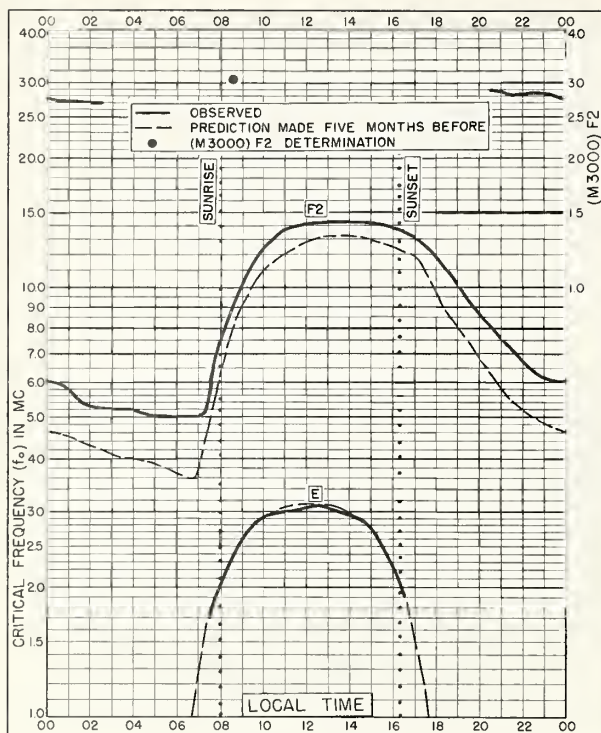


Fig. 29. WINNIPEG, CANADA
49.9°N, 97.4°W

JANUARY 1958

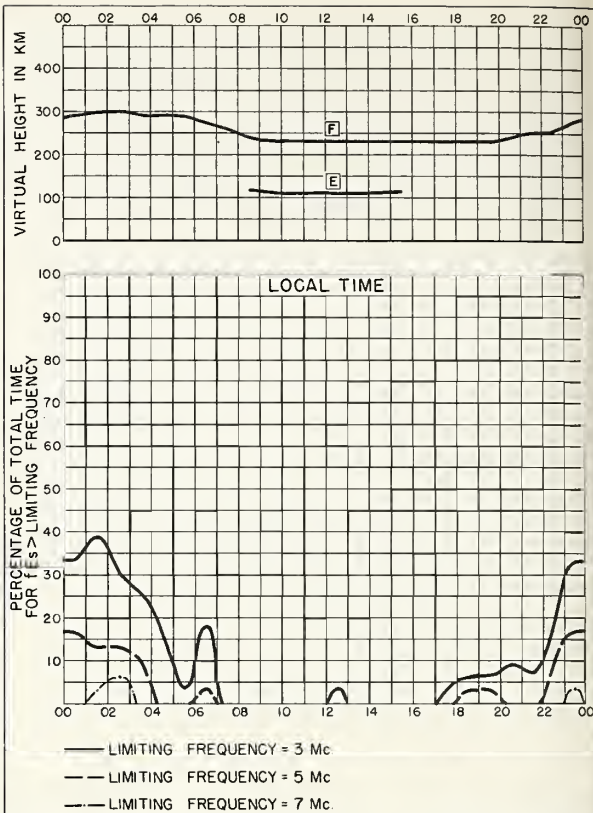


Fig. 30. WINNIPEG, CANADA

JANUARY 1958

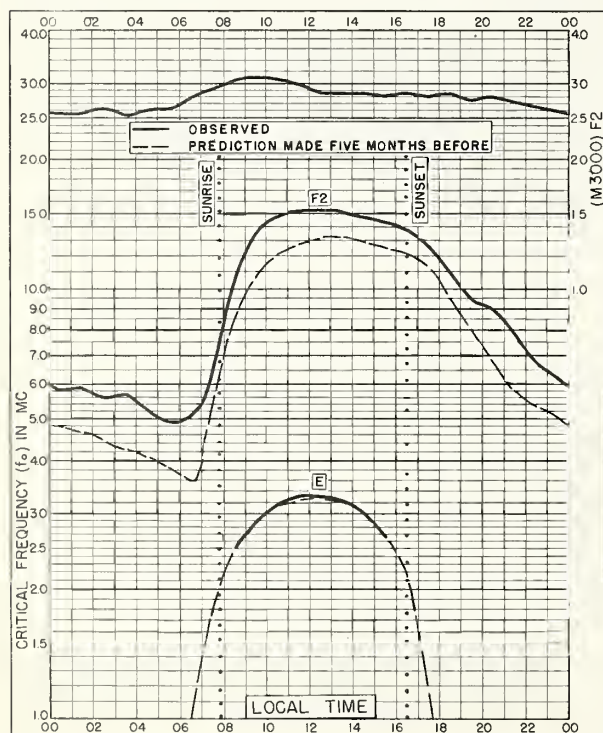


Fig. 31. ST. JOHN'S, NEWFOUNDLAND
47.6°N, 52.7°W

JANUARY 1958

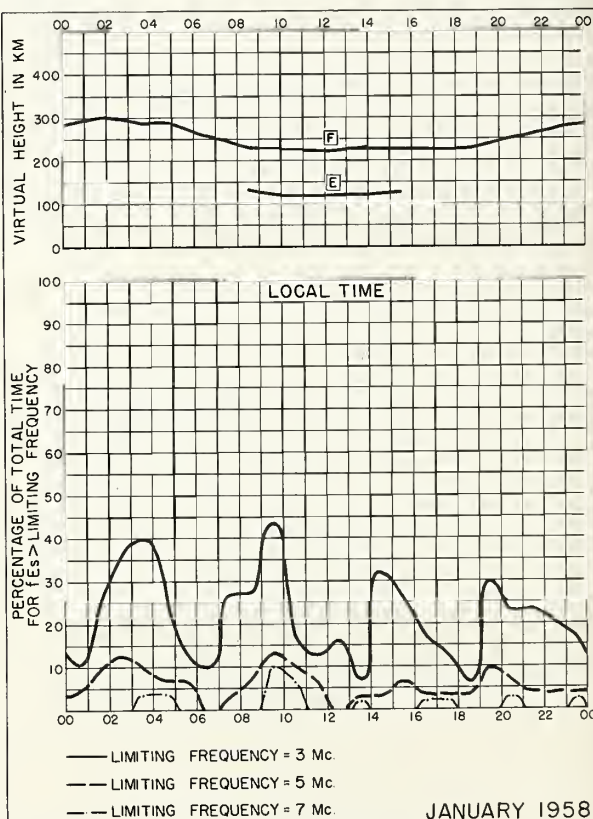


Fig. 32. ST. JOHN'S, NEWFOUNDLAND

JANUARY 1958

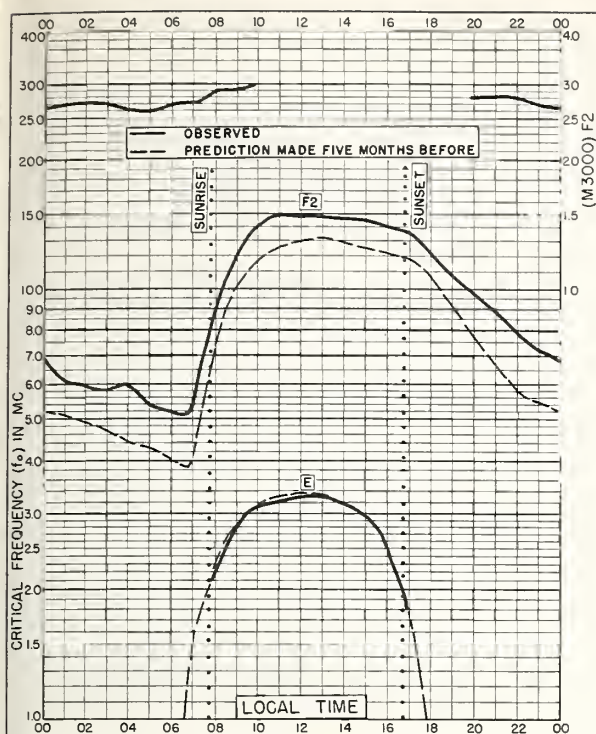


Fig. 33. OTTAWA, CANADA
45.4°N, 75.9°W

JANUARY 1958

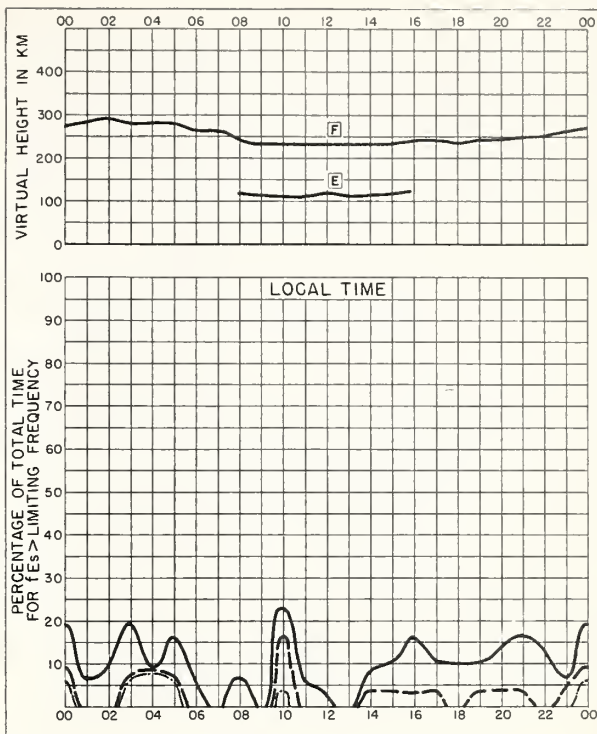


Fig. 34. OTTAWA, CANADA

JANUARY 1958

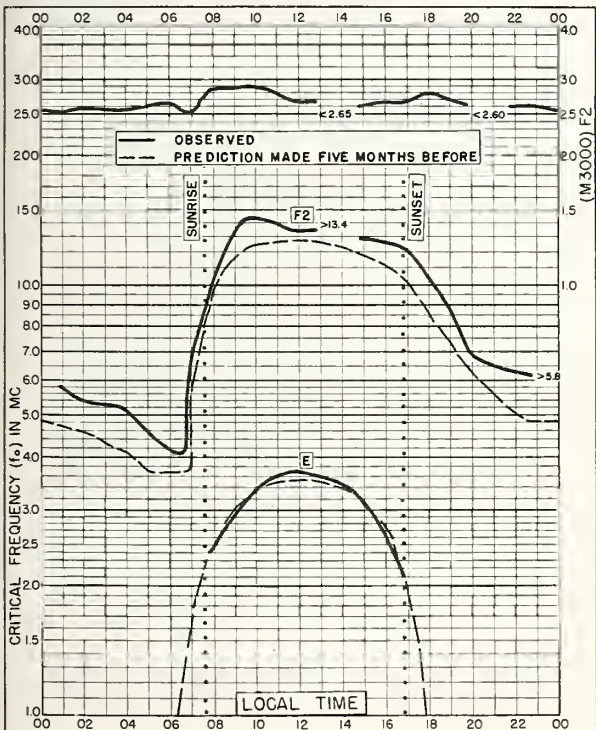


Fig. 35. ROME, ITALY
41.8°N, 12.5°E

JANUARY 1958

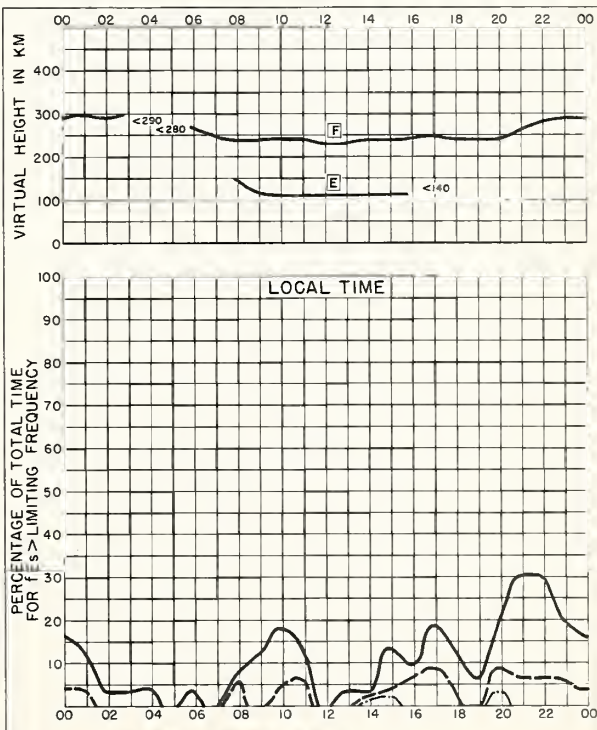


Fig. 36. ROME, ITALY

JANUARY 1958

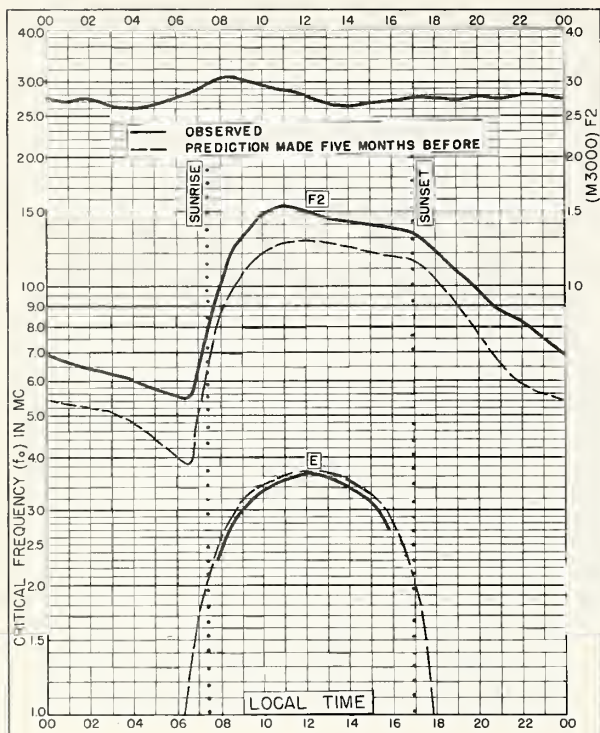


Fig. 37. WASHINGTON, D. C.
38.7°N, 77.1°W

JANUARY 1958

NBS 503

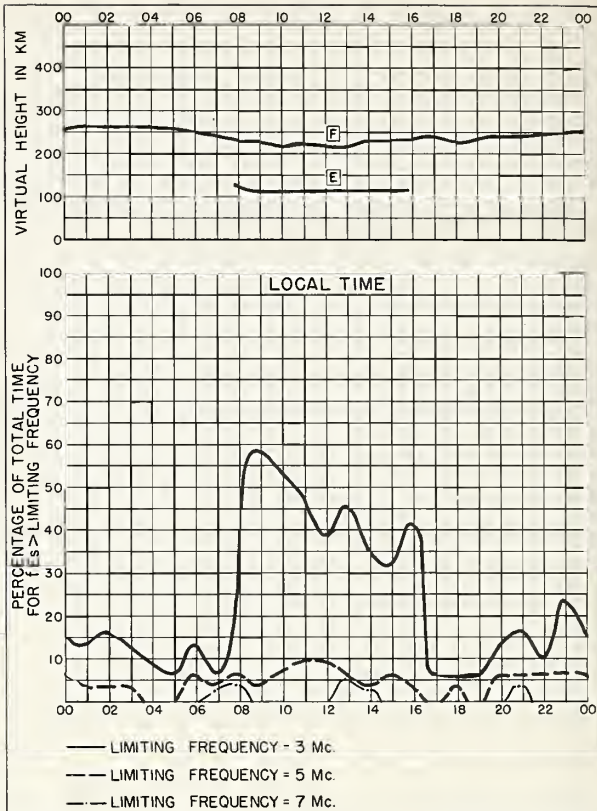


Fig. 38. WASHINGTON, D. C.

JANUARY 1958

NBS 490

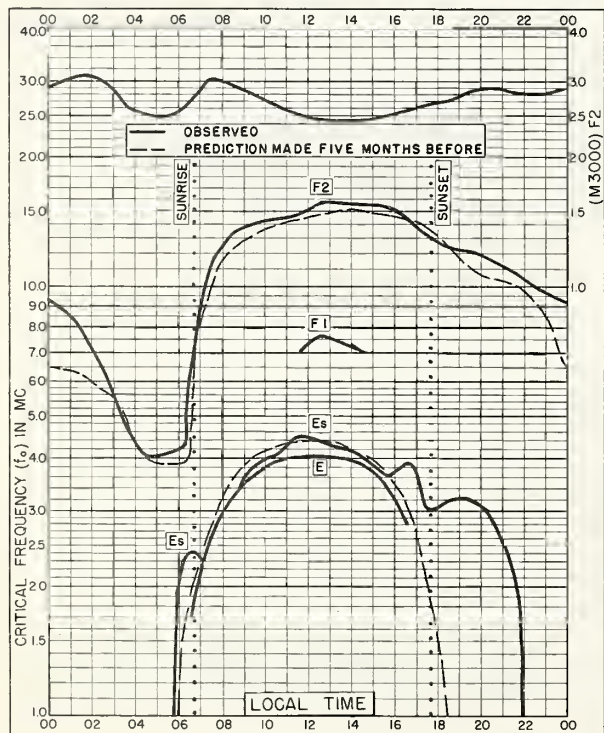


Fig. 39. MAUI, HAWAII
20.8°N, 156.5°W

JANUARY 1958

NBS 503

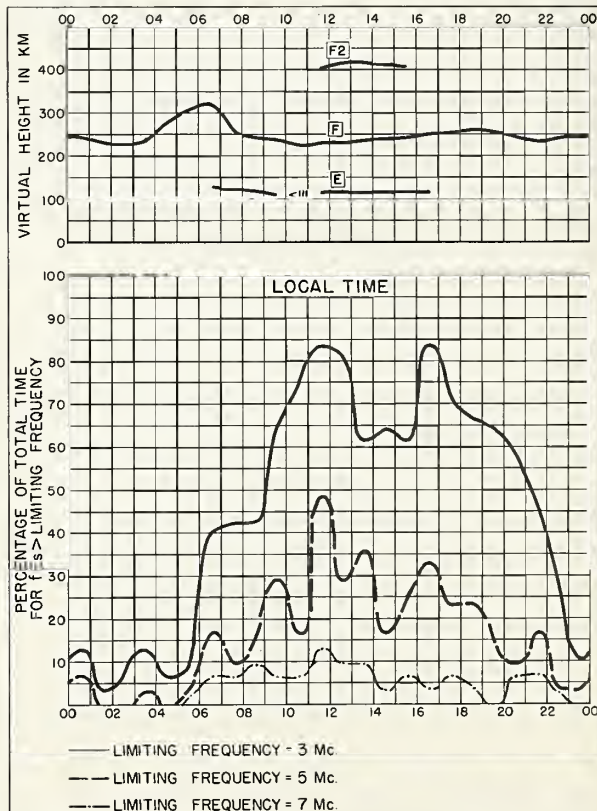


Fig. 40. MAUI, HAWAII

JANUARY 1958

NBS 490

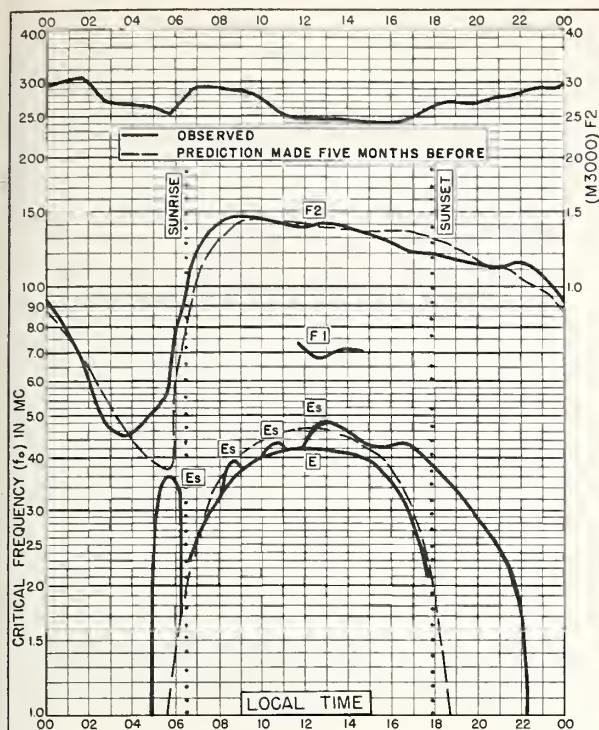


Fig. 41. PANAMA CANAL ZONE
9.4°N, 79.9°W

JANUARY 1958

Commerce-Standard-Problem, Cuba.

NBS 503

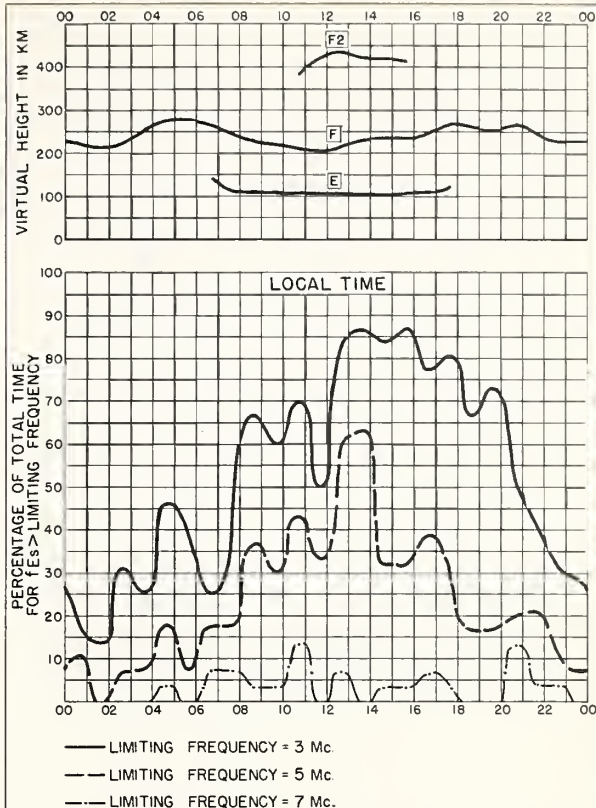


Fig. 42. PANAMA CANAL ZONE

JANUARY 1958

Commerce-Standard-Problem, Cuba.

NBS 490

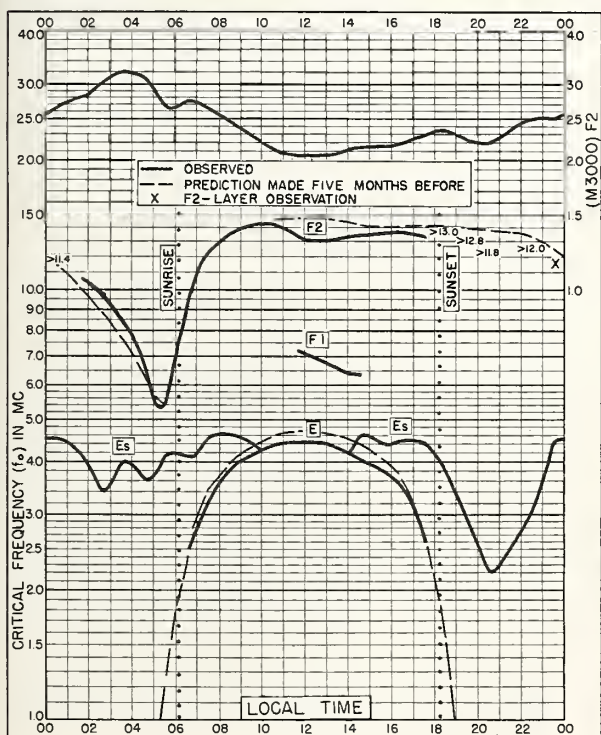


Fig. 43. TALARA, PERU
4.6°S, 81.3°W

JANUARY 1958

Commerce-Standard-Problem, Cuba.

NBS 503

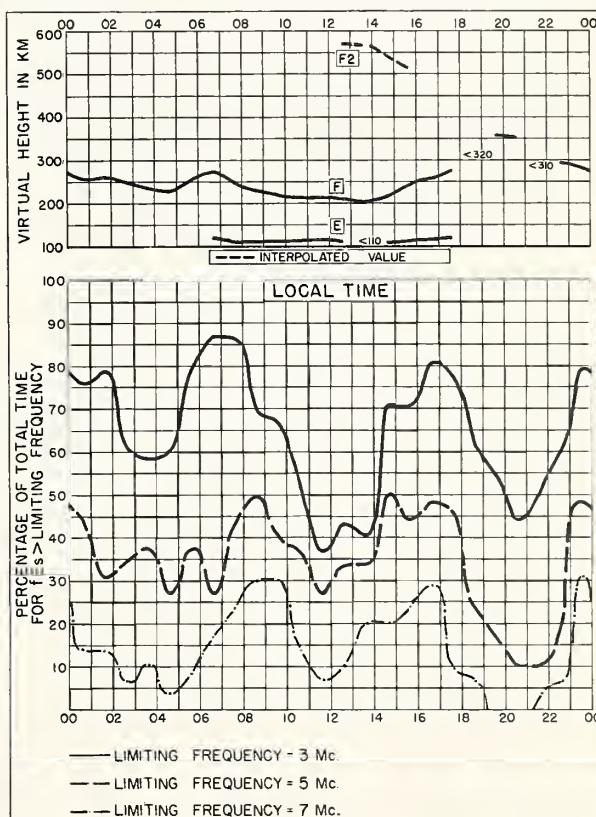


Fig. 44. TALARA, PERU

JANUARY 1958

Commerce-Standard-Problem, Cuba.

NBS 490

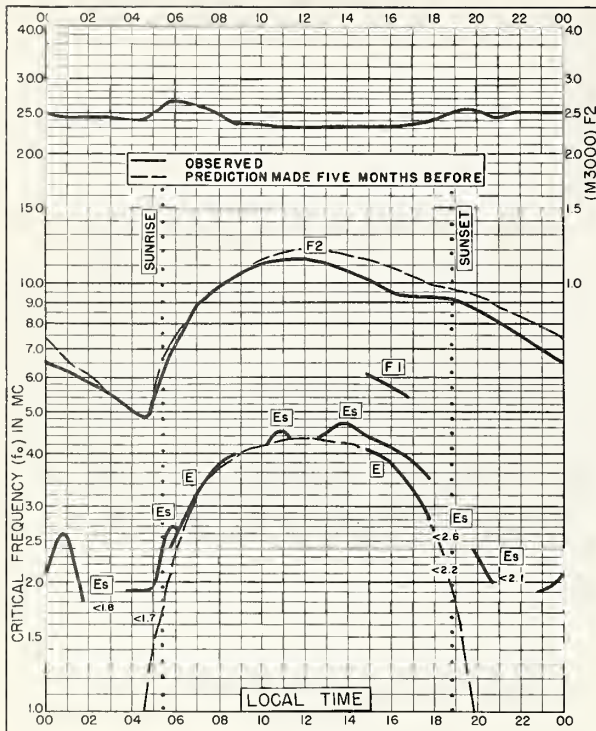


Fig. 45. JOHANNESBURG, UNION OF S. AFRICA
26.2°S, 28.0°E
JANUARY 1958

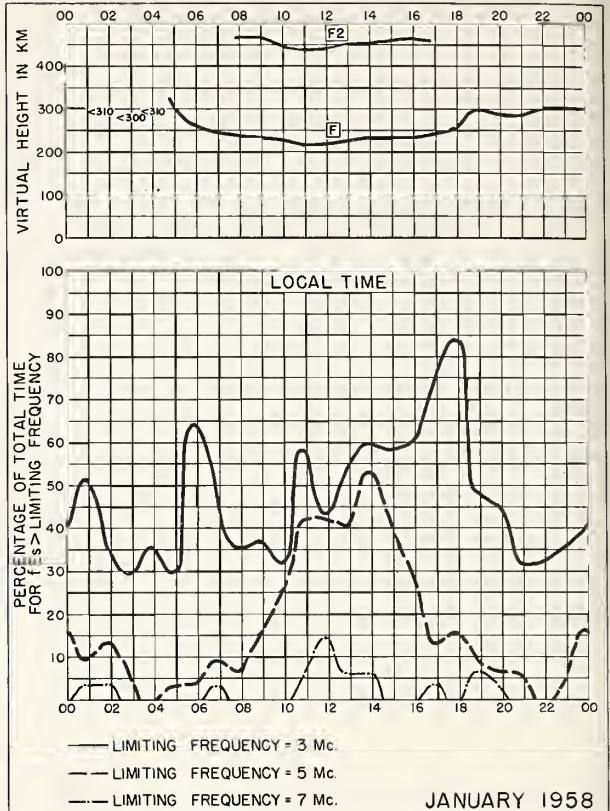


Fig. 46. JOHANNESBURG, UNION OF S. AFRICA
JANUARY 1958

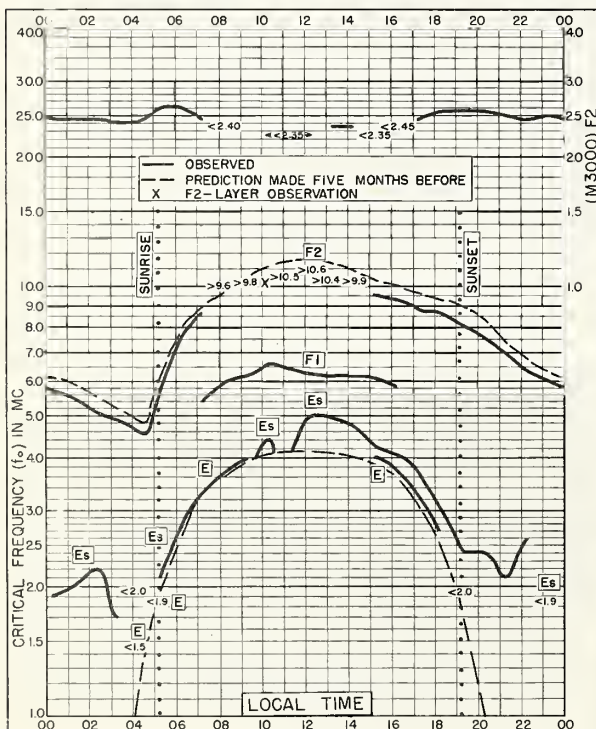


Fig. 47. CAPETOWN, UNION OF S. AFRICA
34.1°S, 18.3°E
JANUARY 1958

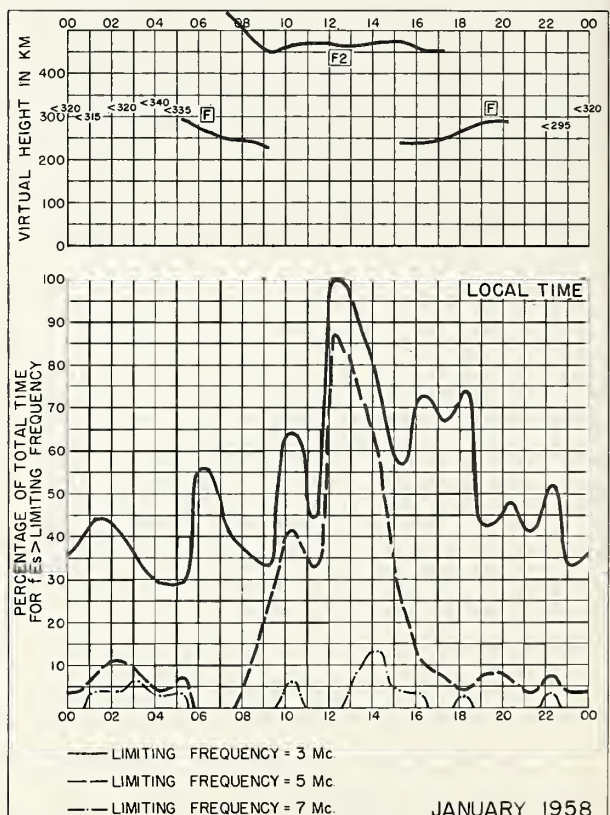


Fig. 48. CAPETOWN, UNION OF S. AFRICA
JANUARY 1958

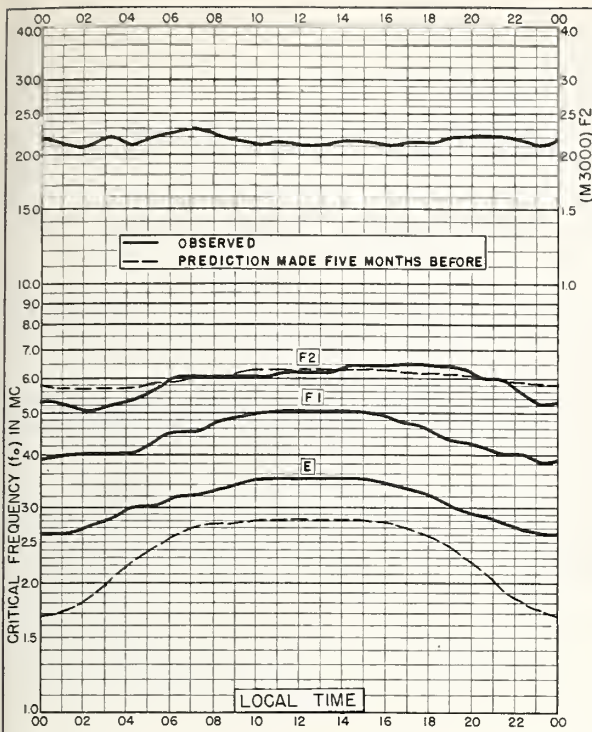


Fig. 49. SCOTT BASE
77.8°S, 166.8°E
JANUARY 1958

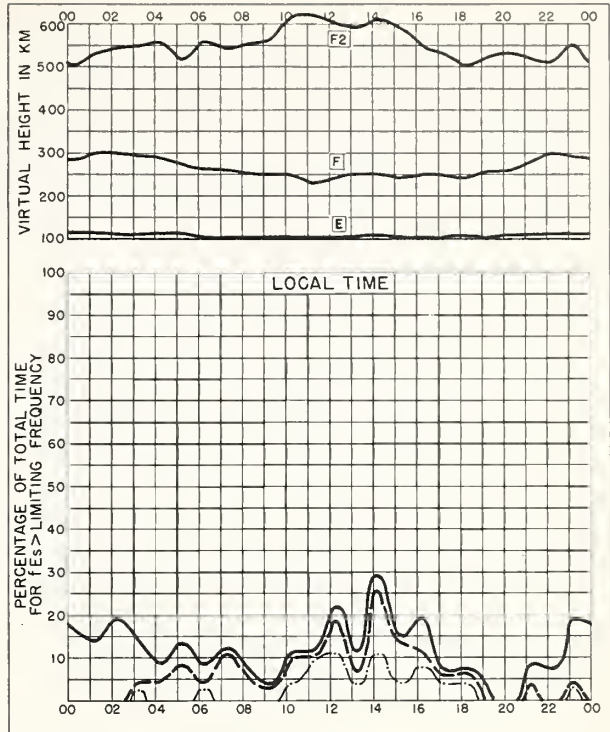


Fig. 50. SCOTT BASE
JANUARY 1958

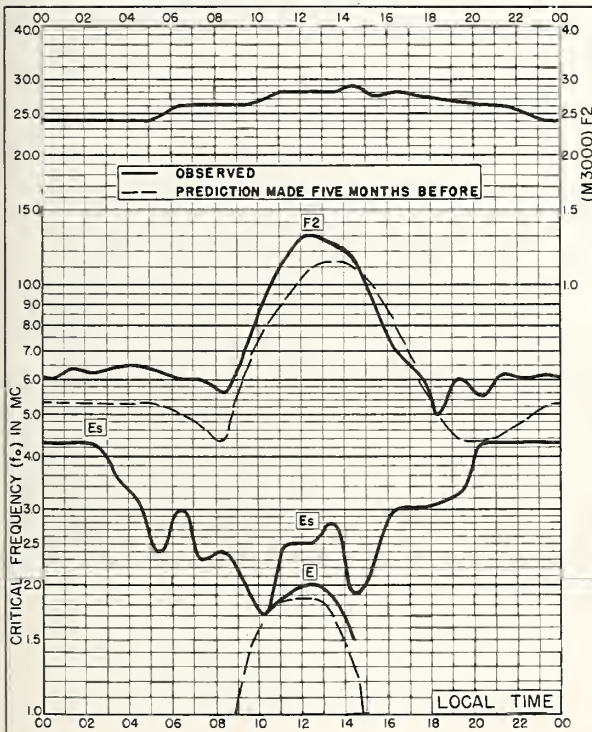


Fig. 51. KIRUNA, SWEDEN
67.8°N, 20.3°E
DECEMBER 1957

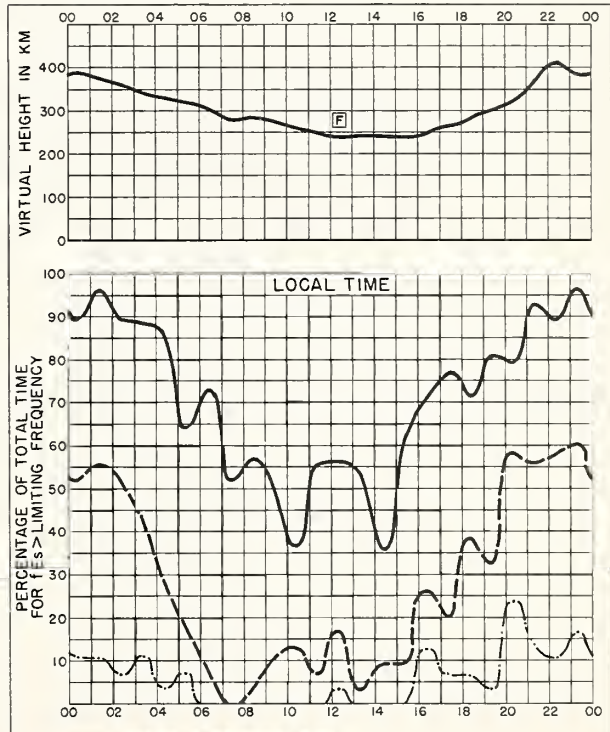


Fig. 52. KIRUNA, SWEDEN
DECEMBER 1957

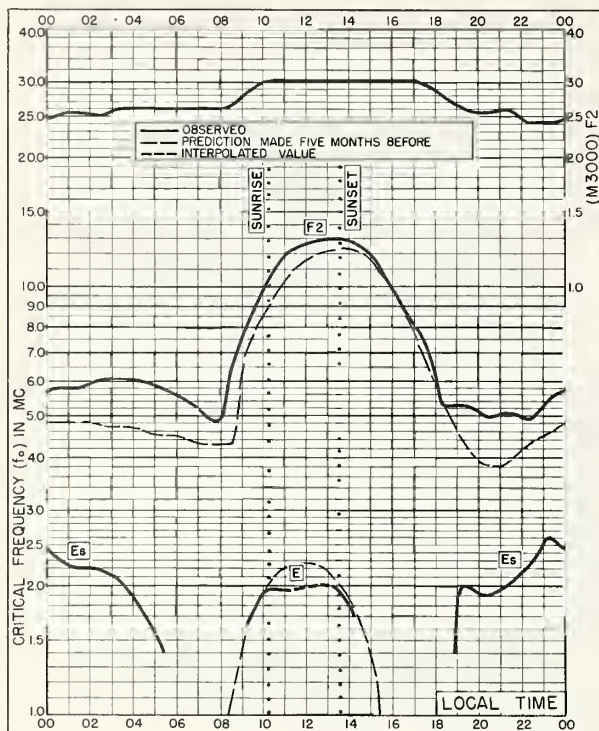


Fig. 53. LYCKSELE, SWEDEN
64.6°N, 18.8°E

DECEMBER 1957

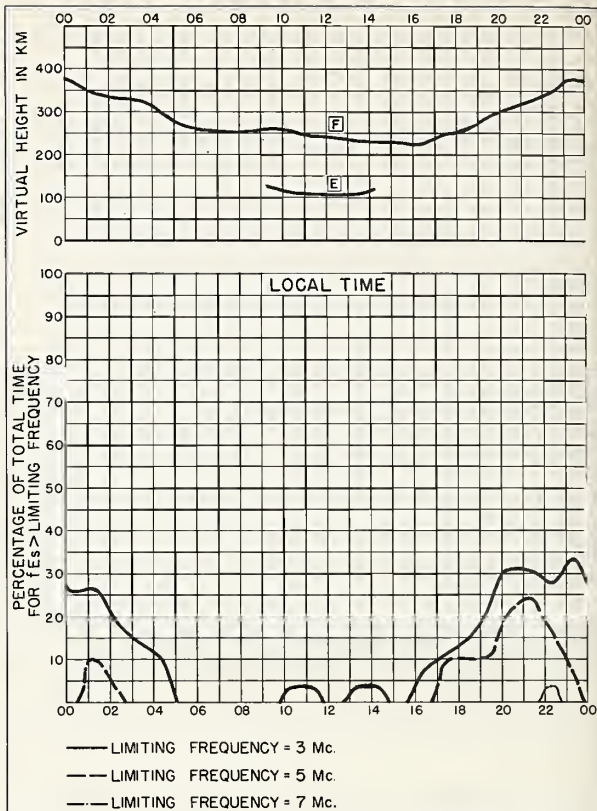


Fig. 54. LYCKSELE, SWEDEN DECEMBER 1957

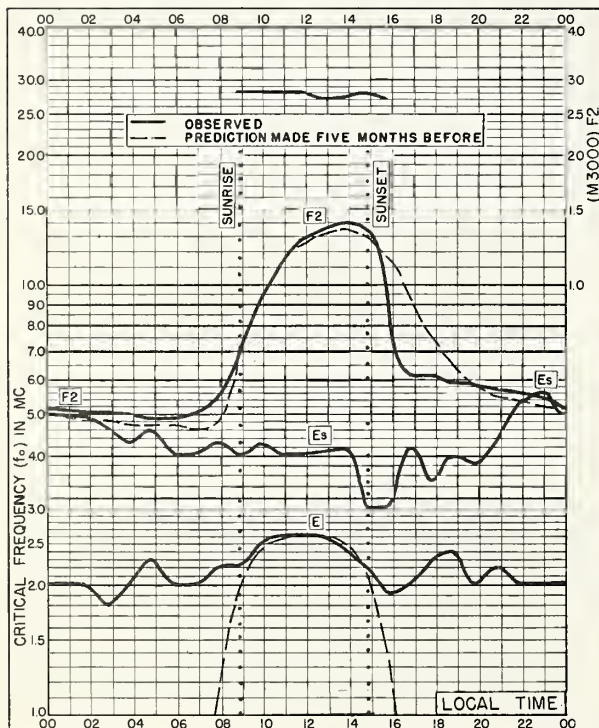


Fig. 55. CHURCHILL, CANADA
58.8°N, 94.2°W

DECEMBER 1957

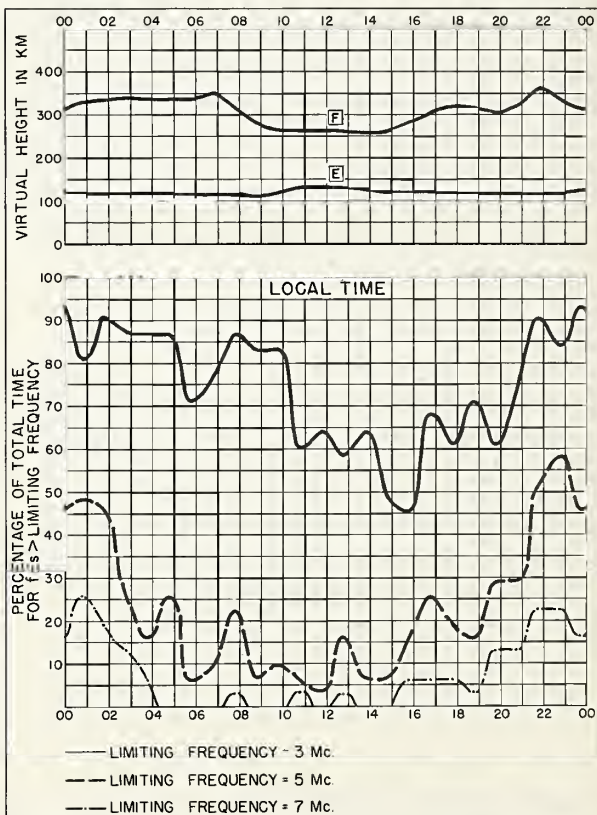


Fig. 56. CHURCHILL, CANADA DECEMBER 1957

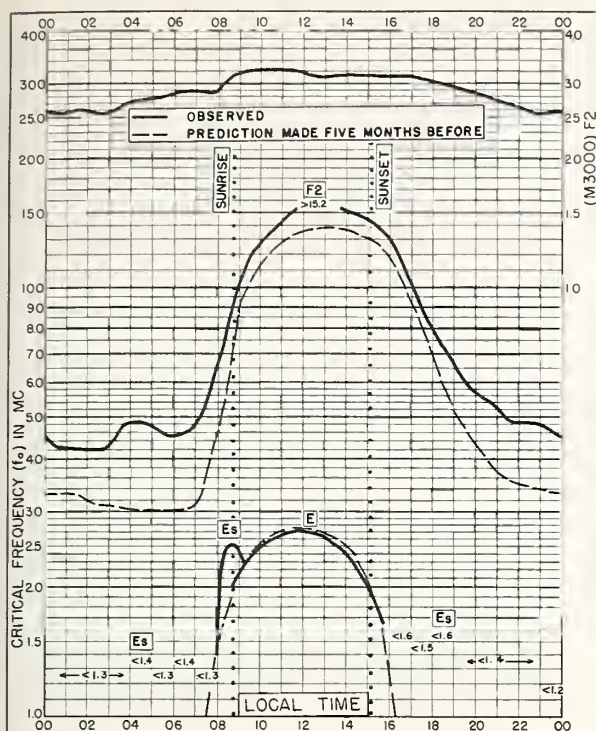


Fig. 57. INVERNESS, SCOTLAND

57.4°N, 4.2°W

DECEMBER 1957

NBS 503

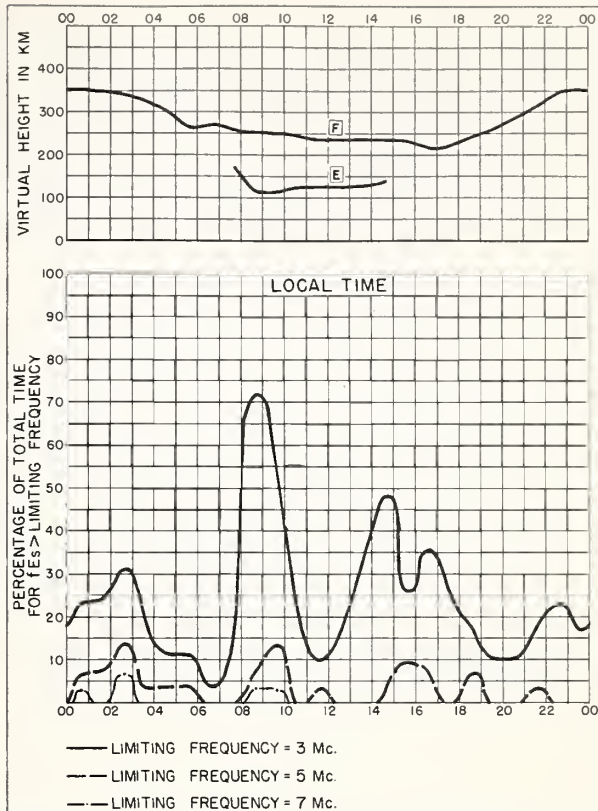


Fig. 58. INVERNESS, SCOTLAND DECEMBER 1957

NBS 490

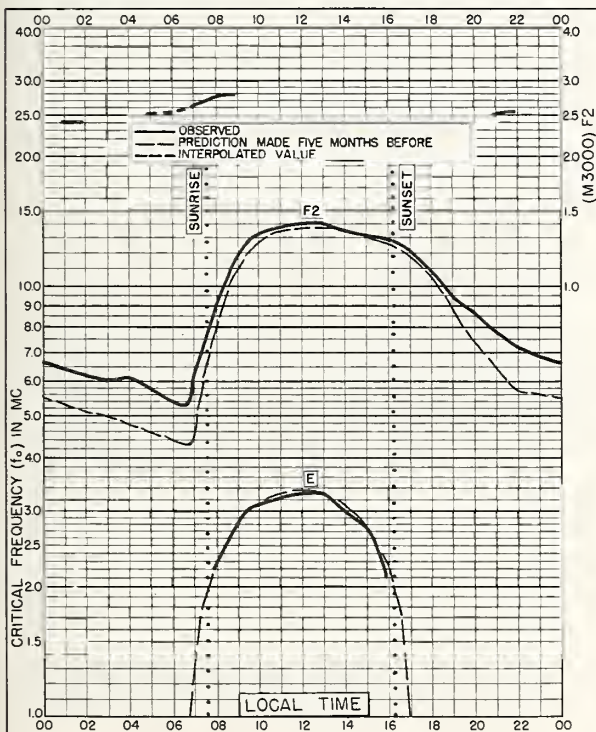


Fig. 59. OTTAWA, CANADA

45.4°N, 75.9°W

DECEMBER 1957

NBS 503

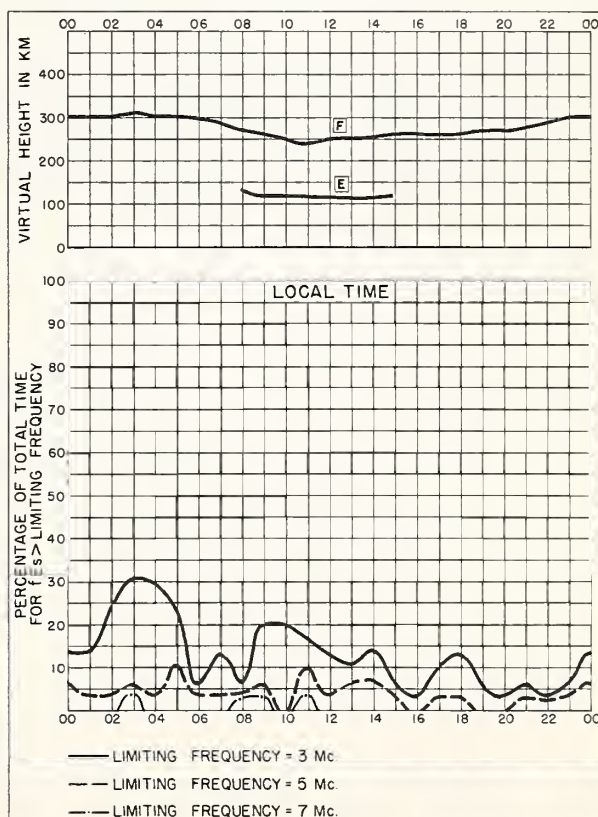


Fig. 60. OTTAWA, CANADA

DECEMBER 1957

NBS 490

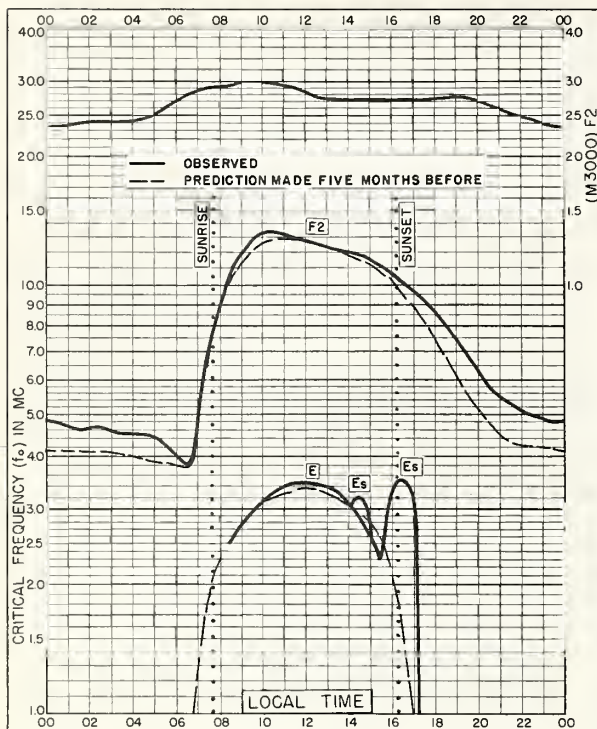


Fig. 61. WAKKANAI, JAPAN
45.4°N, 141.7°E

DECEMBER 1957

Compass: Standard Position, Coll. NBS 503

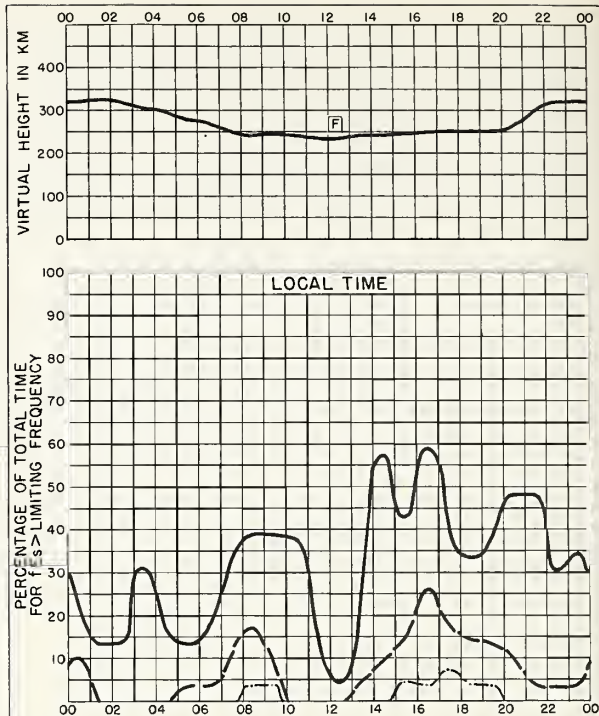


Fig. 62. WAKKANAI, JAPAN

DECEMBER 1957

Compass: Standard Position, Coll. NBS 490

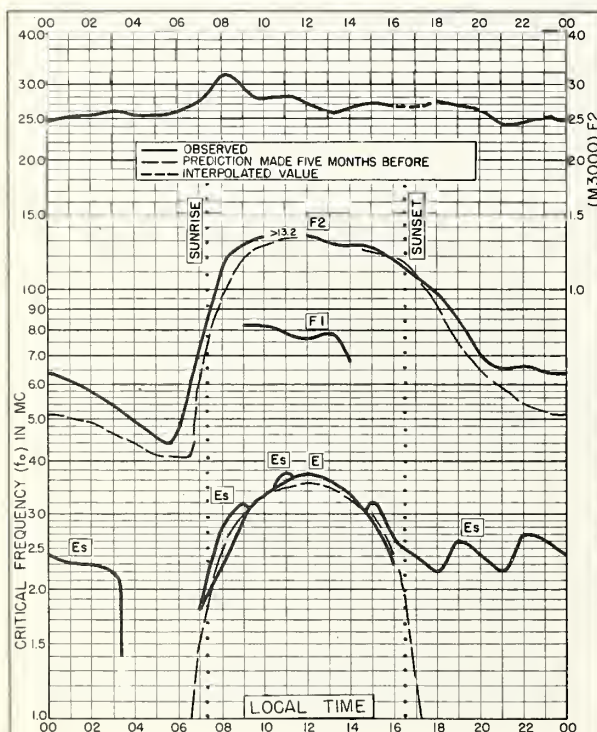


Fig. 63. TORTOSA, SPAIN
40.8°N, 0.5°E

DECEMBER 1957

Compass: Standard Position, Coll. NBS 503

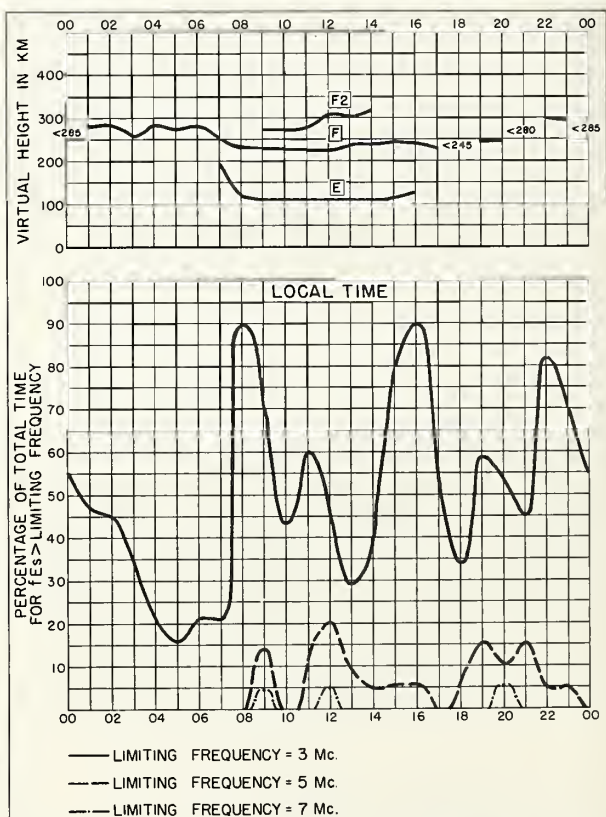
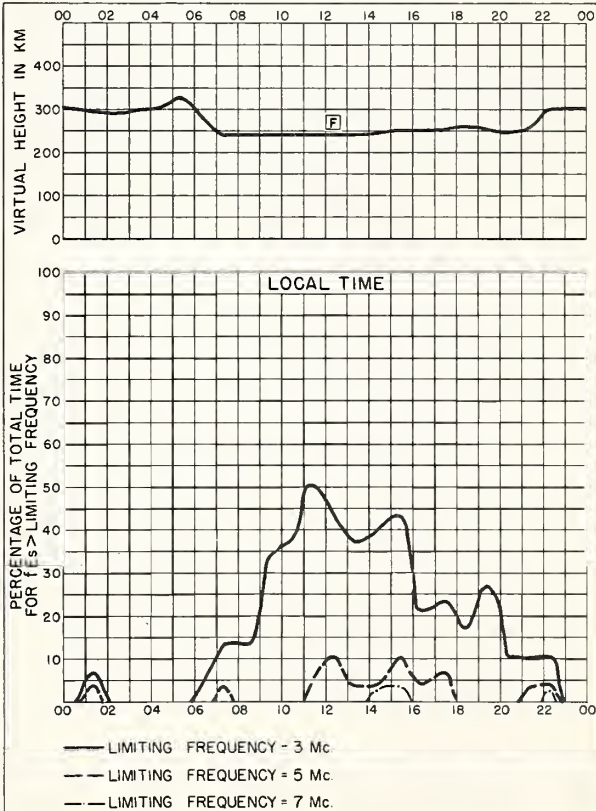
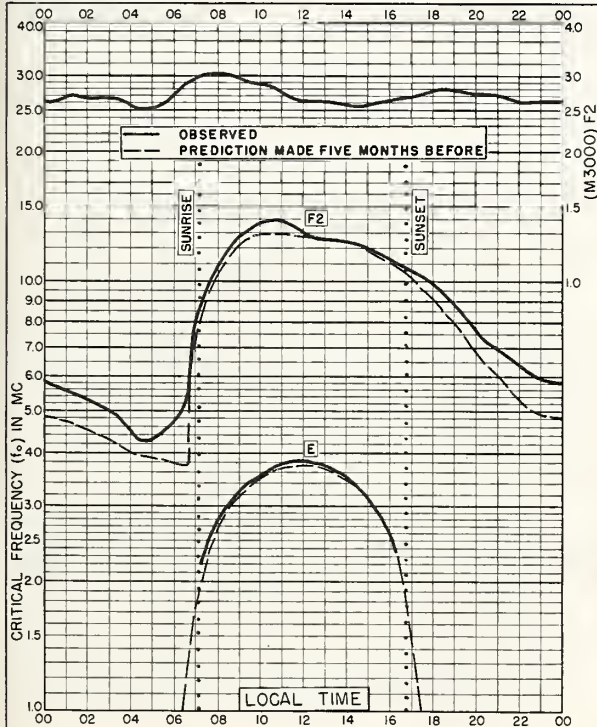
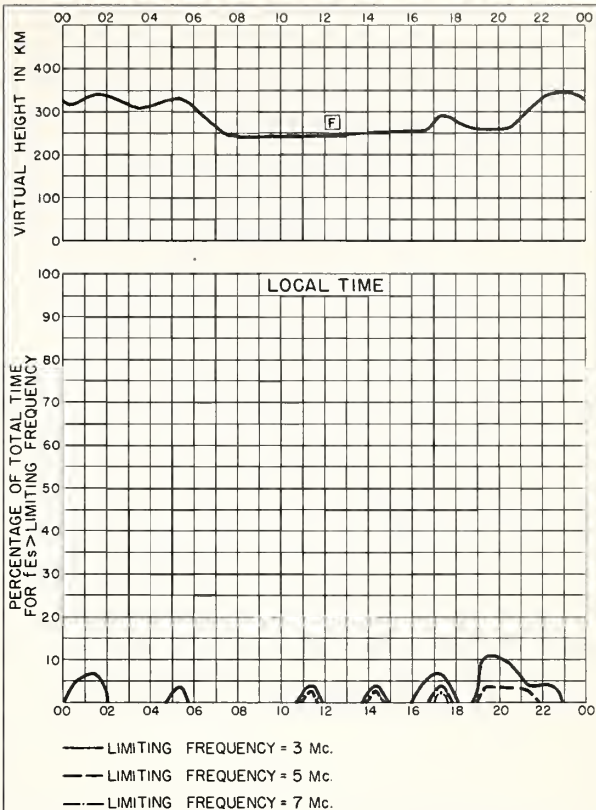
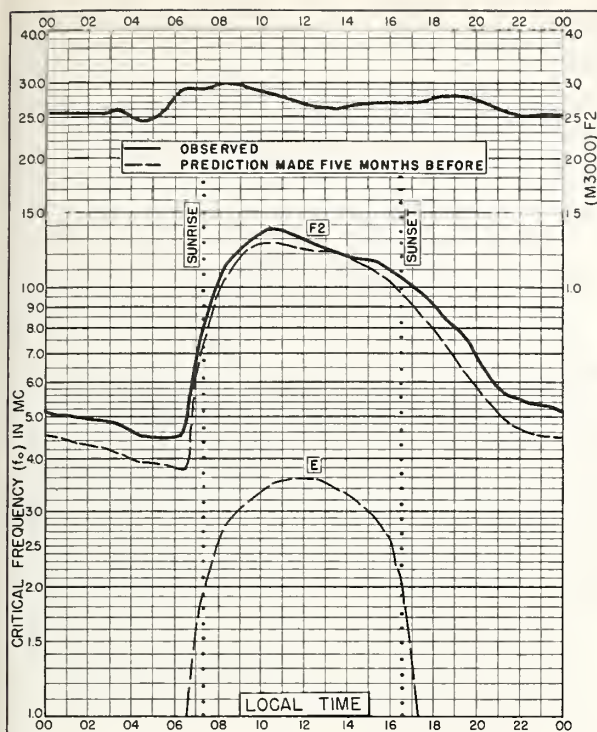


Fig. 64. TORTOSA, SPAIN

DECEMBER 1957

Compass: Standard Position, Coll. NBS 490



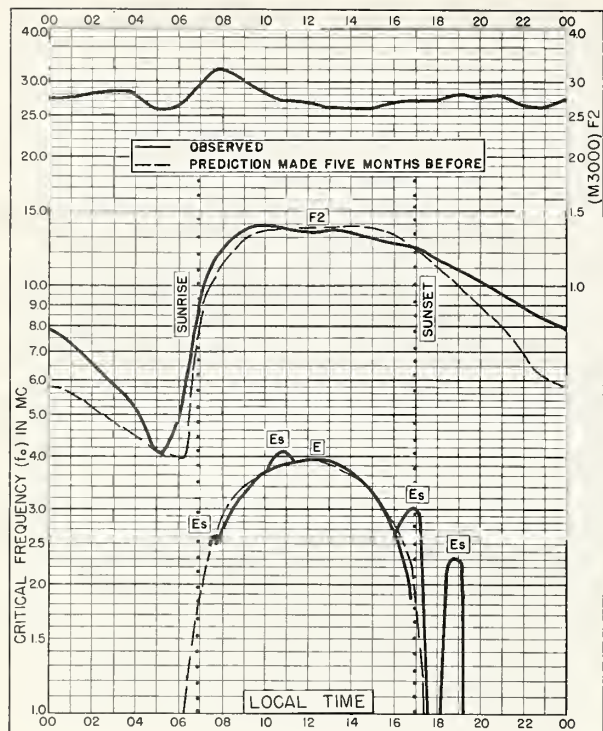


Fig. 69. YAMAGAWA, JAPAN
31.2°N, 130.6°E

DECEMBER 1957

NBS 503

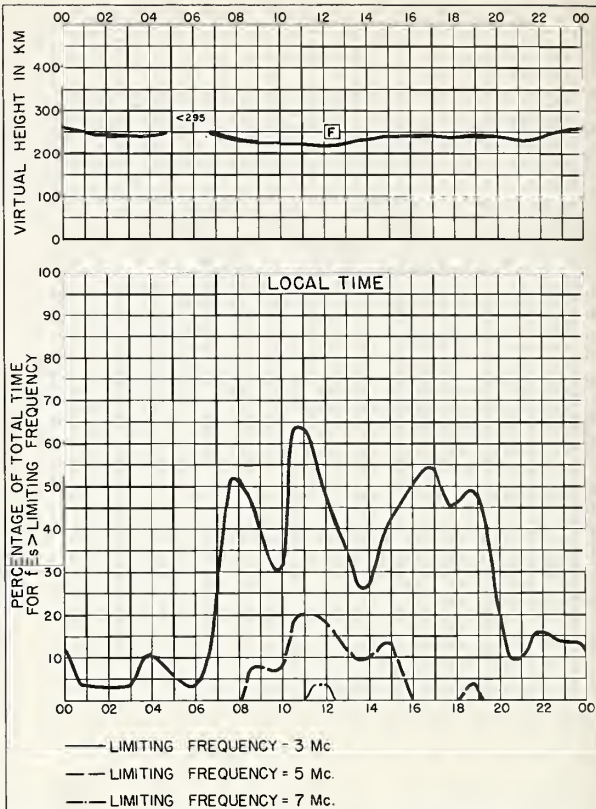


Fig. 70. YAMAGAWA, JAPAN

DECEMBER 1957

NBS 490

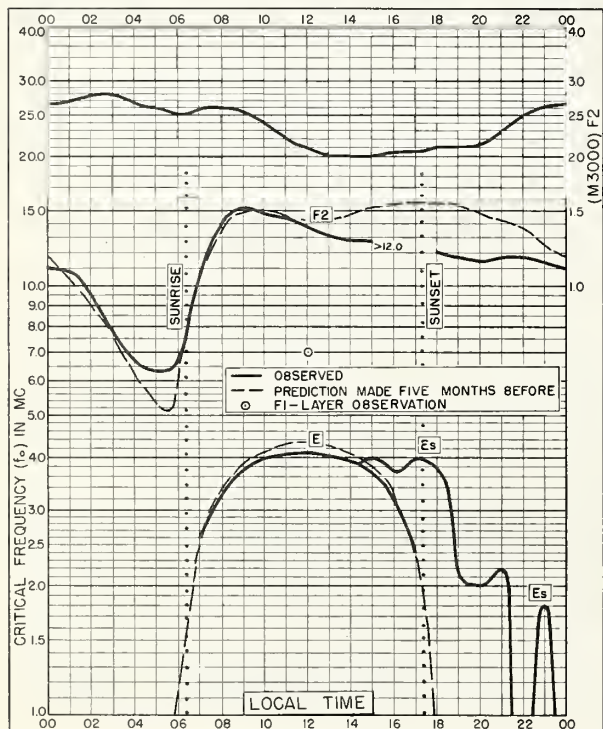


Fig. 71. BAGUIO, P. I.
16.4°N, 120.6°E

DECEMBER 1957

NBS 503

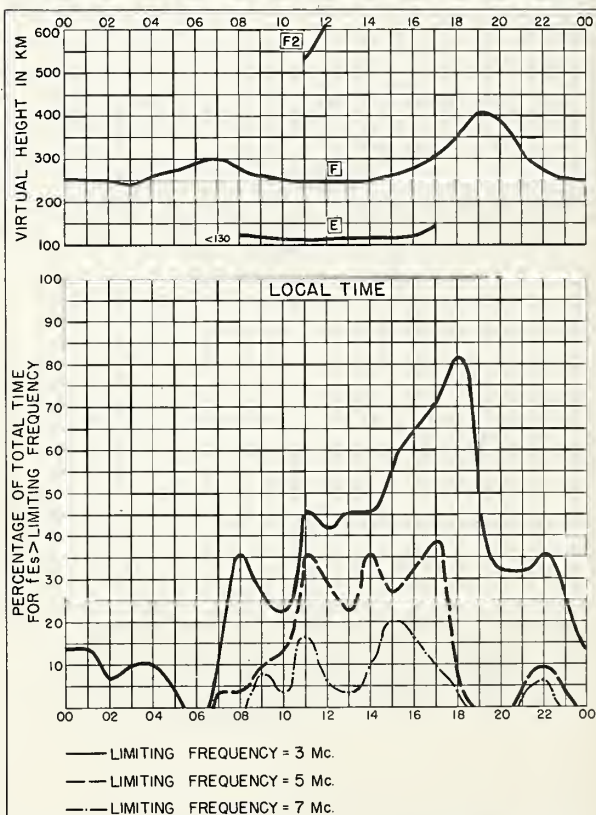


Fig. 72. BAGUIO, P. I.

DECEMBER 1957

NBS 490

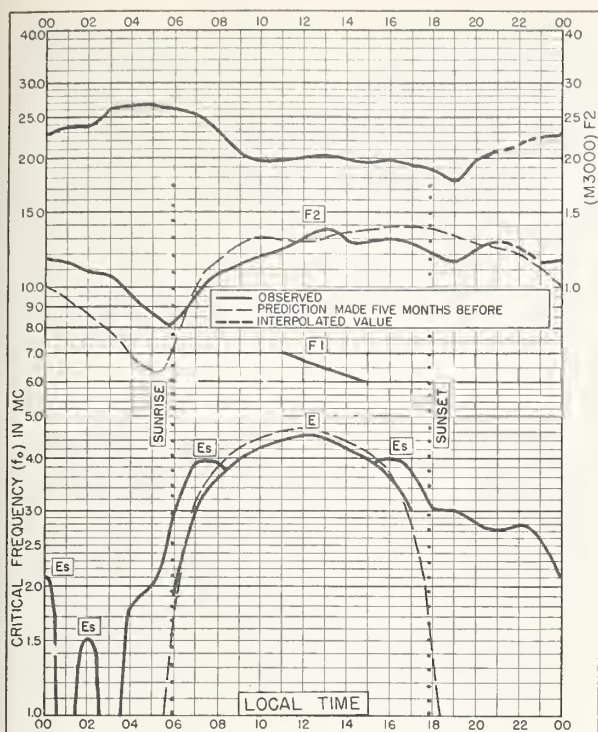


Fig. 73. BUNIA, BELGIAN CONGO
1.5°N, 30.2°E
DECEMBER 1957

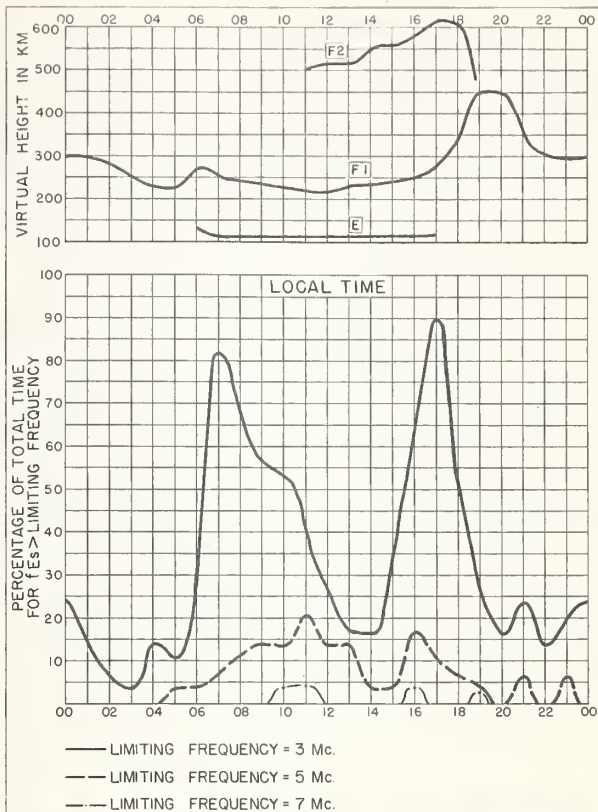


Fig. 74. BUNIA, BELGIAN CONGO DECEMBER 1957

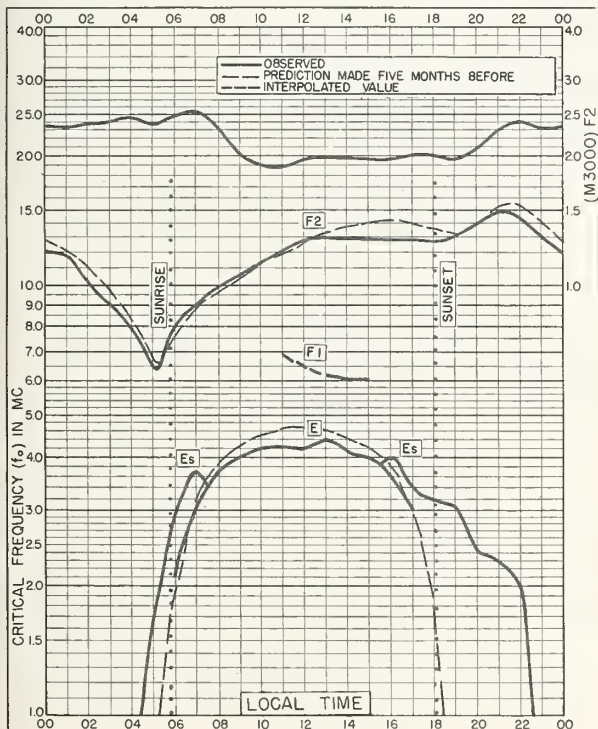


Fig. 75. LEOPOLDVILLE, BELGIAN CONGO
4.4°S, 15.2°E
DECEMBER 1957

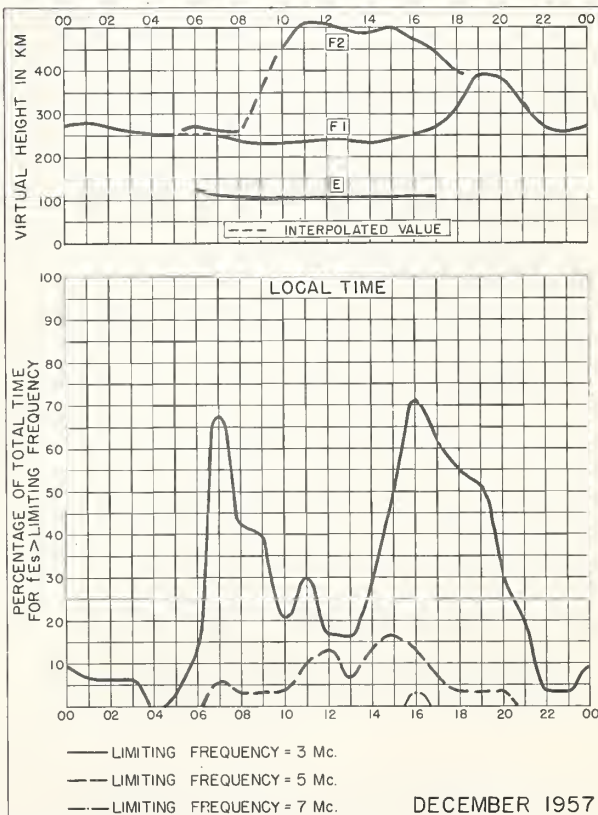
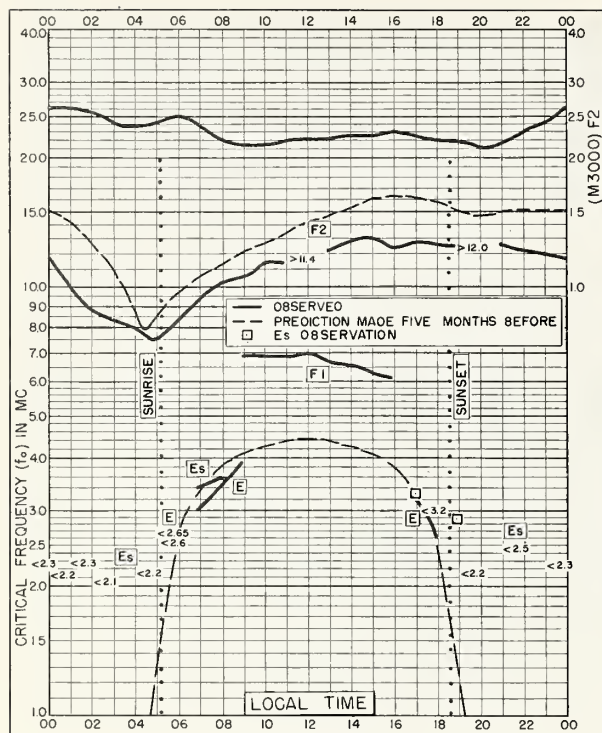
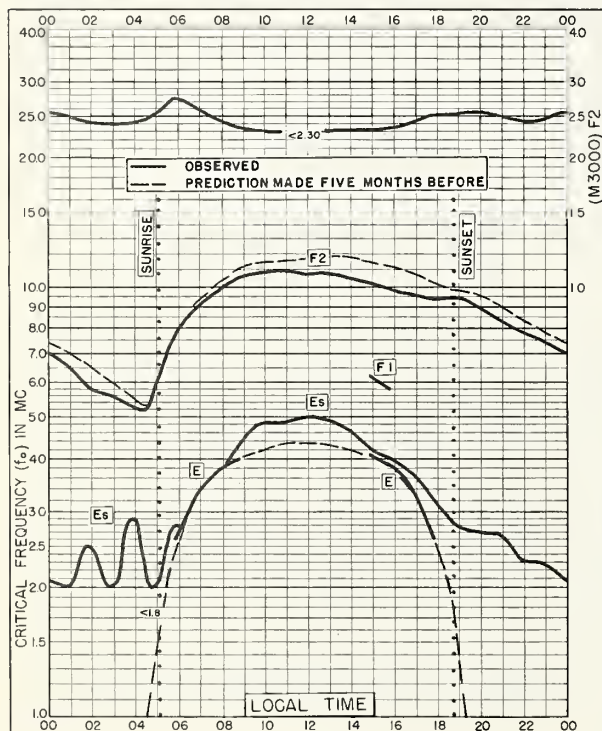


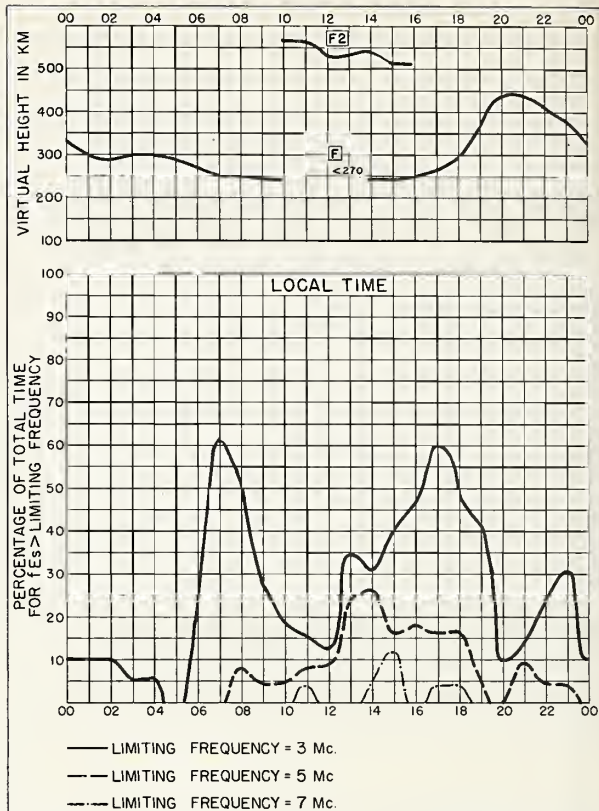
Fig. 76. LEOPOLDVILLE, BELGIAN CONGO
DECEMBER 1957



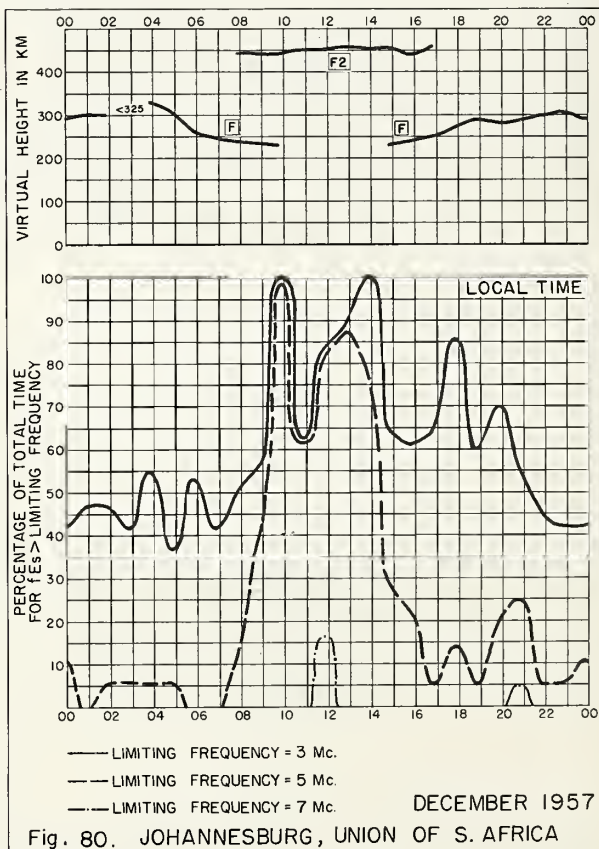
NBS 503



NBS 503



NBS 490



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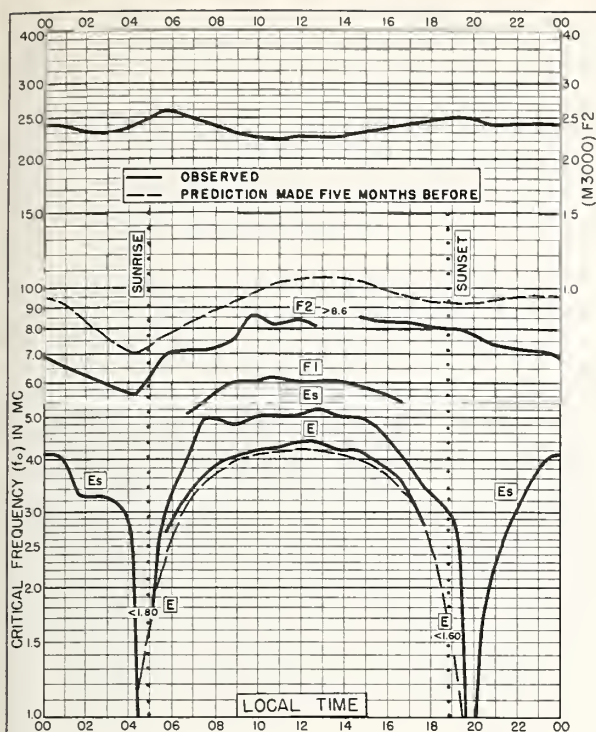


Fig. 81. WATHEROO, W. AUSTRALIA
30.3°S, 115.9°E
DECEMBER 1957

Communications Division, Gales

NBS 503

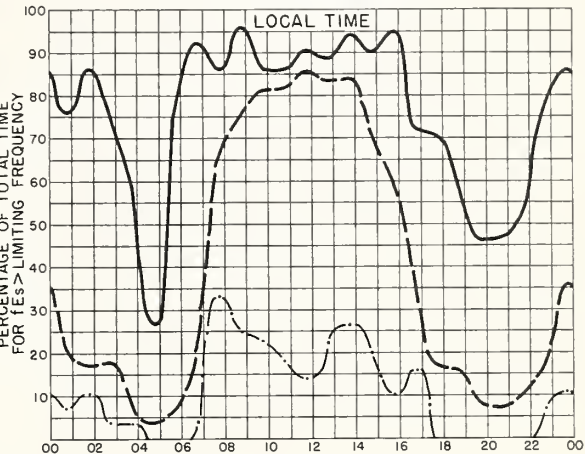
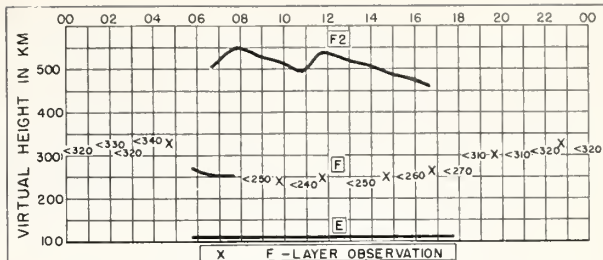


Fig. 82. WATHEROO, W. AUSTRALIA
DECEMBER 1957

Communications Division, Gales

NBS 490

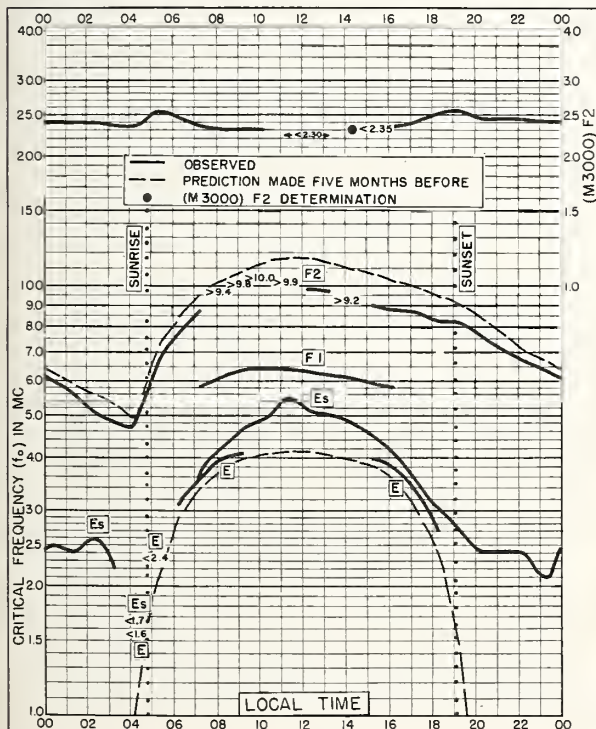


Fig. 83. CAPETOWN, UNION OF S. AFRICA
34.1°S, 18.3°E
DECEMBER 1957

Communications Division, Gales

NBS 503

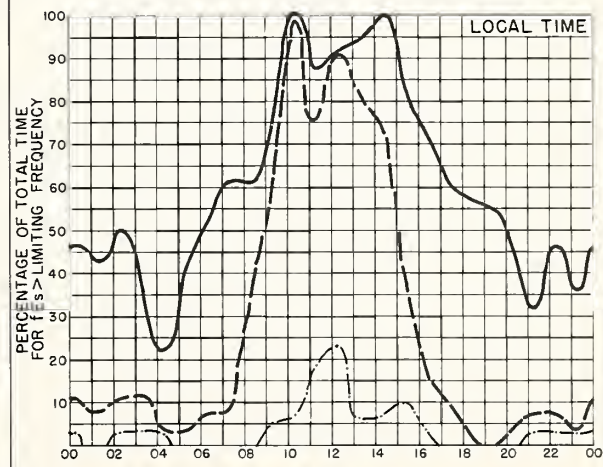
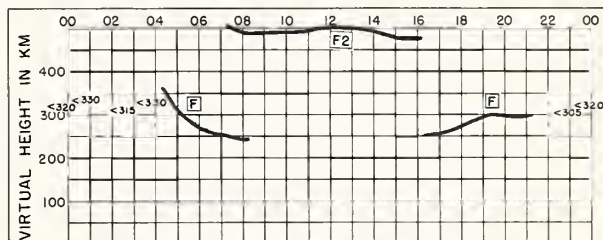


Fig. 84. CAPETOWN, UNION OF S. AFRICA
DECEMBER 1957

Communications Division, Gales

NBS 490

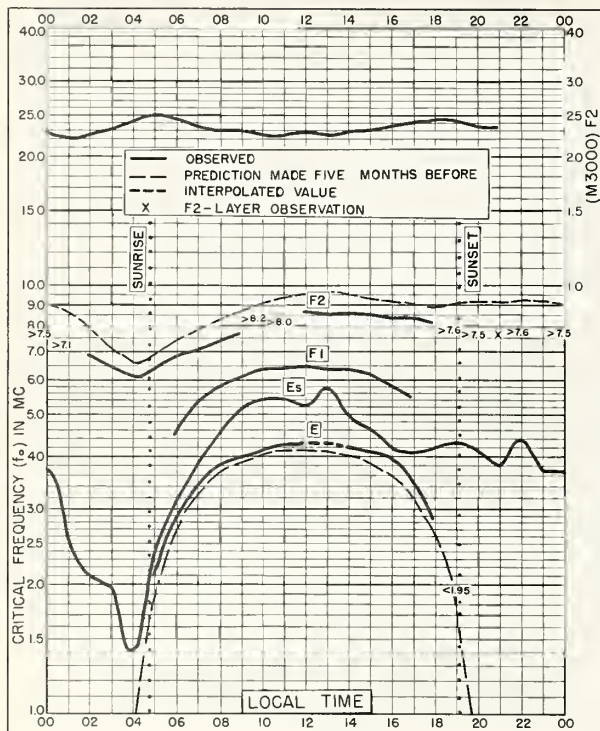


Fig. 85. CANBERRA, AUSTRALIA
35.3°S, 149.0°E DECEMBER 1957

Comments: Standard Deviation: 0.50 NBS 503

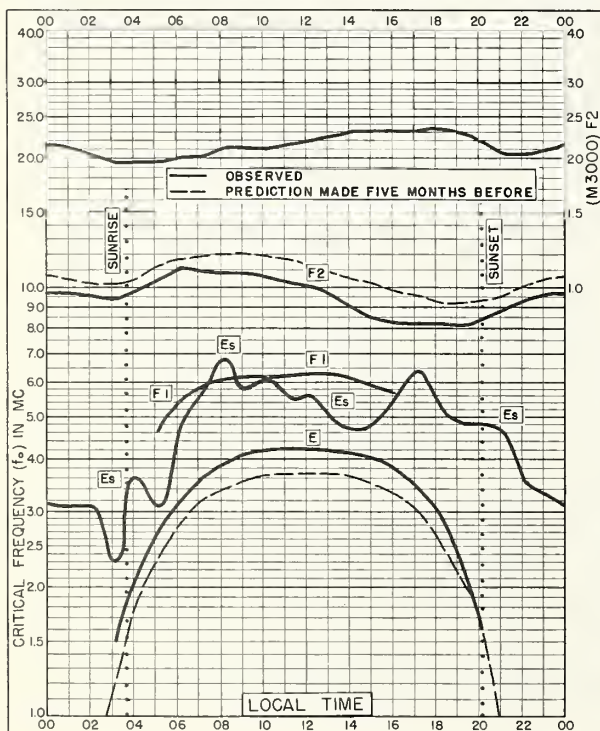


Fig. 87. FALKLAND IS.
51.7°S, 57.8°W DECEMBER 1957

Comments: Standard Deviation: 0.50 NBS 503

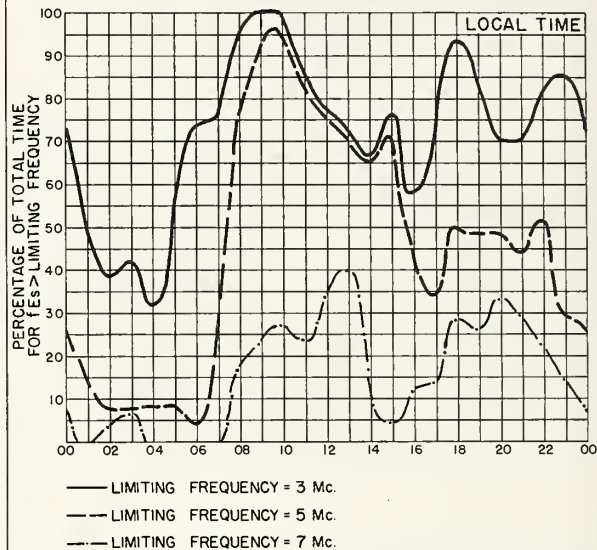
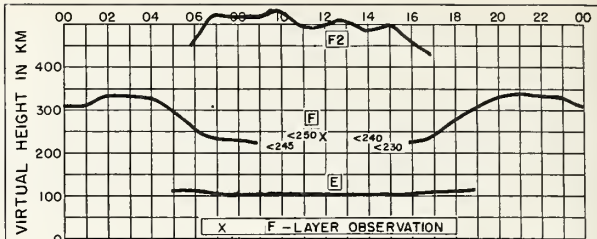


Fig. 86. CANBERRA, AUSTRALIA DECEMBER 1957

Comments: Standard Deviation: 0.50 NBS 490

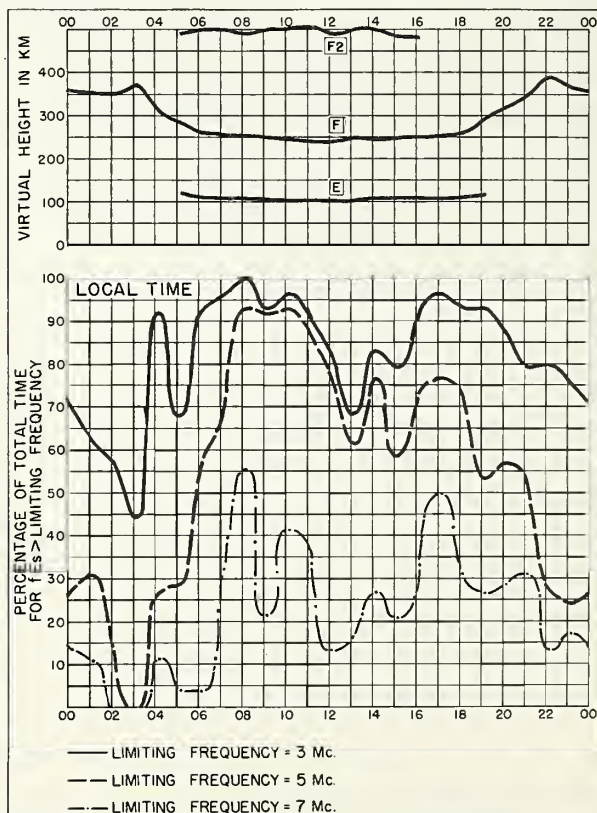


Fig. 88. FALKLAND IS. DECEMBER 1957

Comments: Standard Deviation: 0.50 NBS 490

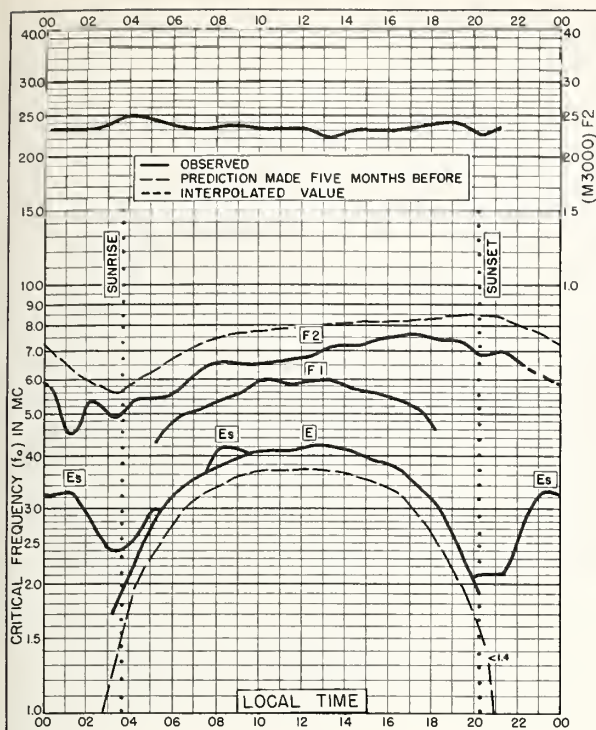


Fig. 89. CAMPBELL I.
52.5°S, 169.2°E DECEMBER 1957

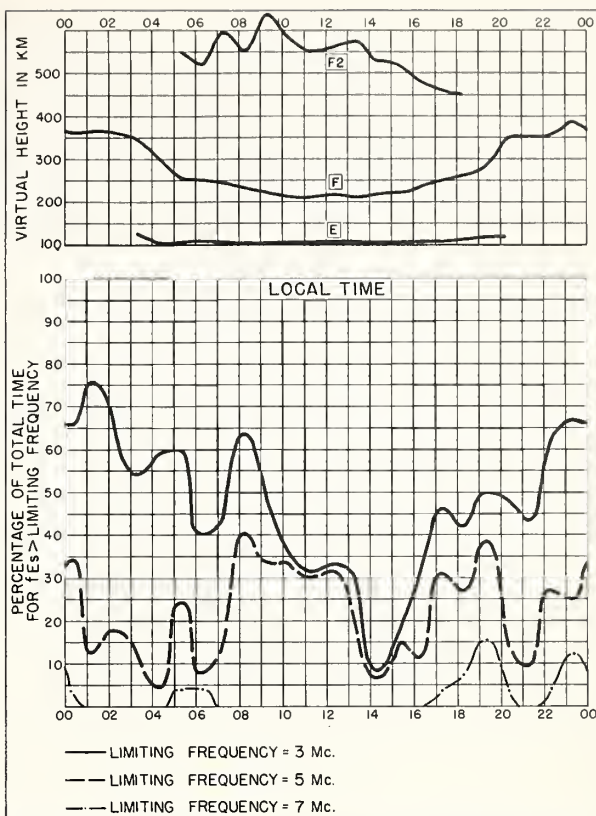


Fig. 90. CAMPBELL I. DECEMBER 1957

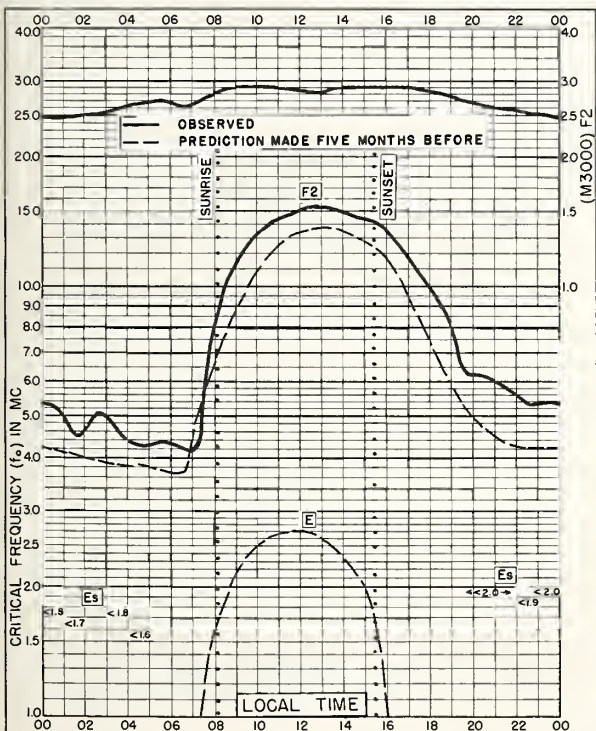


Fig. 91. NURMIJARVI, FINLAND
60.5°N, 24.6°E NOVEMBER 1957

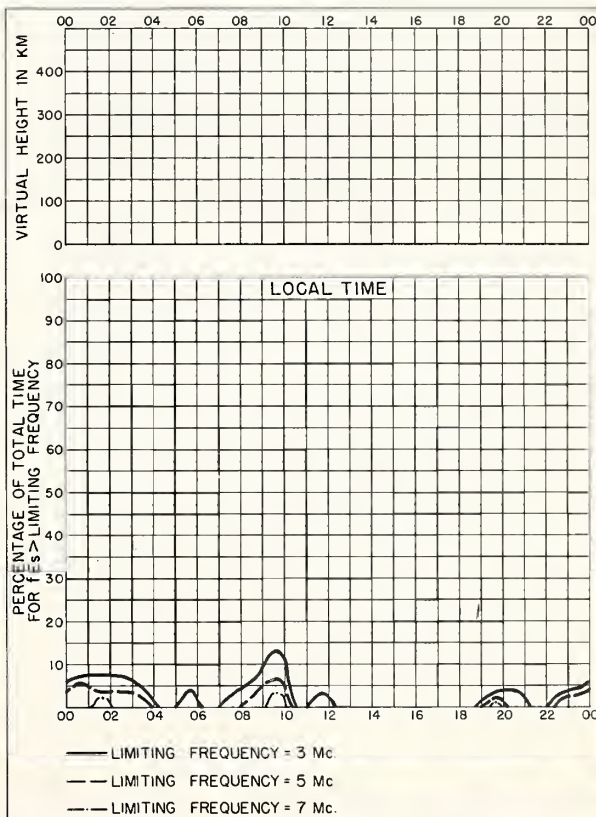


Fig. 92. NURMIJARVI, FINLAND NOVEMBER 1957

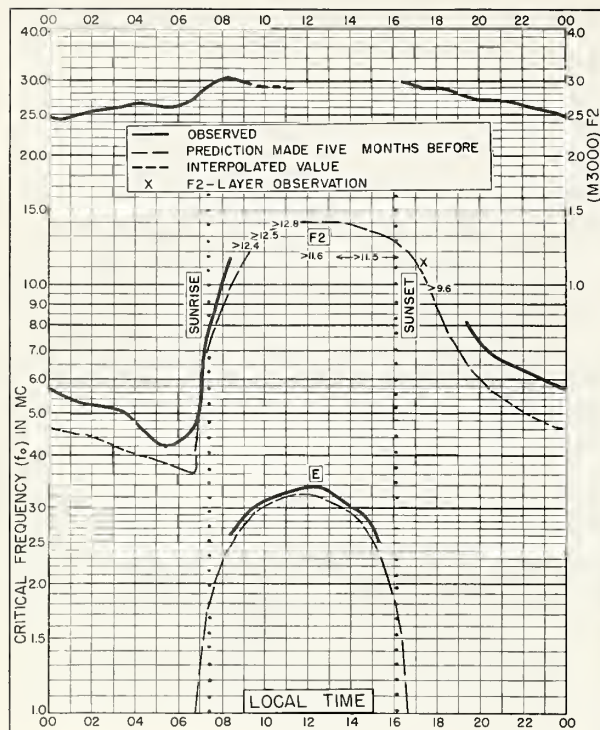


Fig. 93. De BILT, HOLLAND
52.1°N, 5.2°E

NOVEMBER 1957

NBS 503

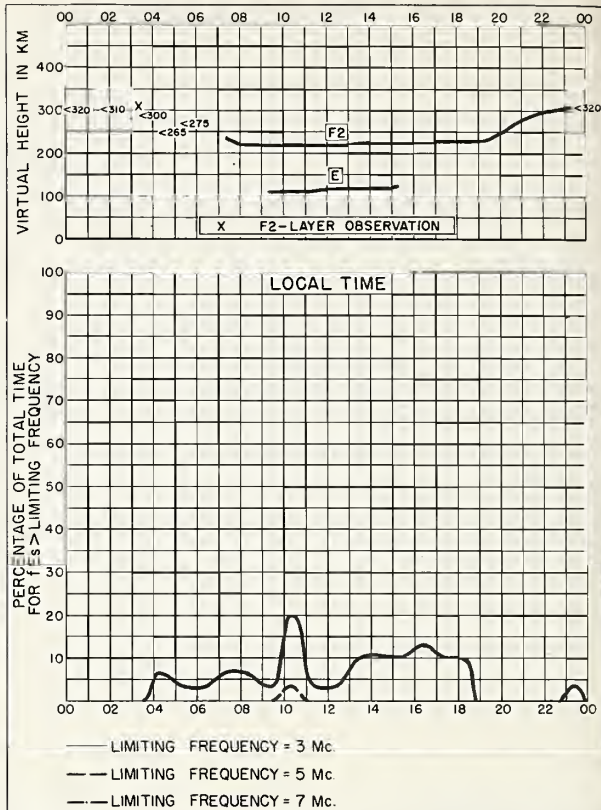


Fig. 94. De BILT, HOLLAND

NOVEMBER 1957

NBS 490

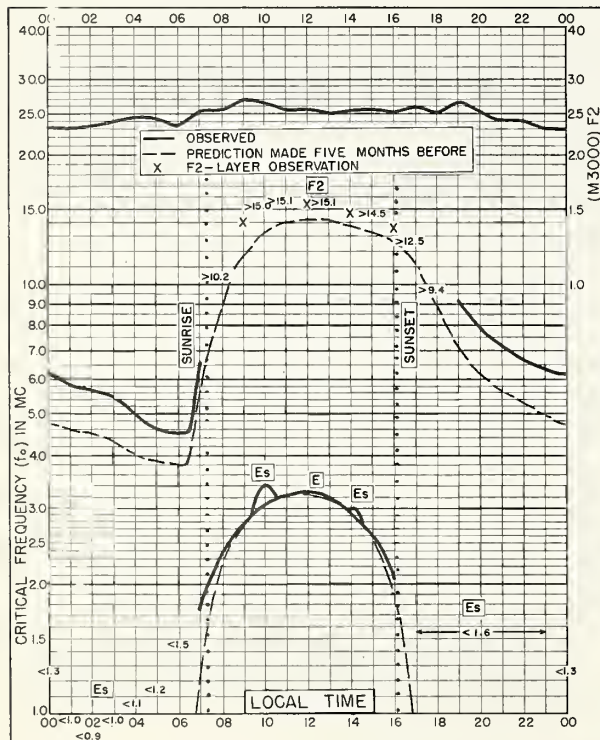


Fig. 95. SLOUGH, ENGLAND
51.5°N, 0.6°W

NOVEMBER 1957

NBS 503

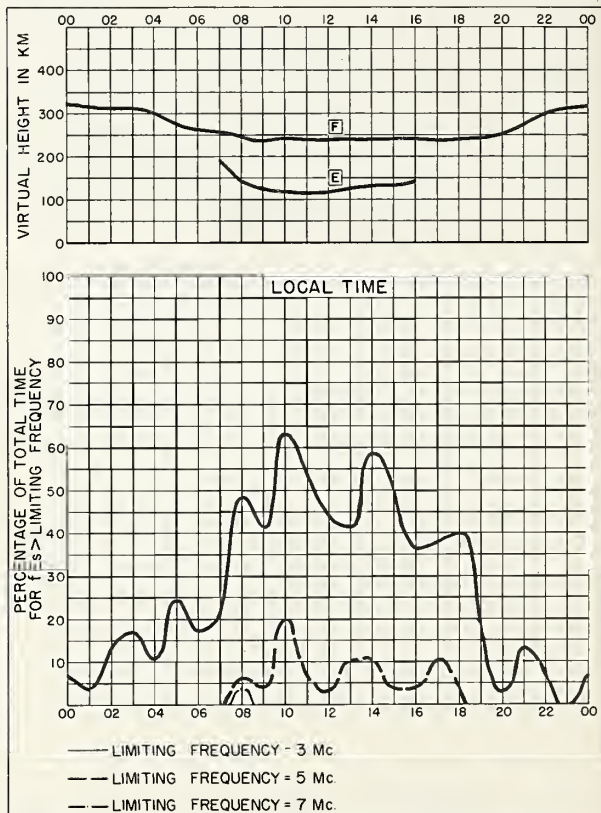


Fig. 96. SLOUGH, ENGLAND

NOVEMBER 1957

NBS 490

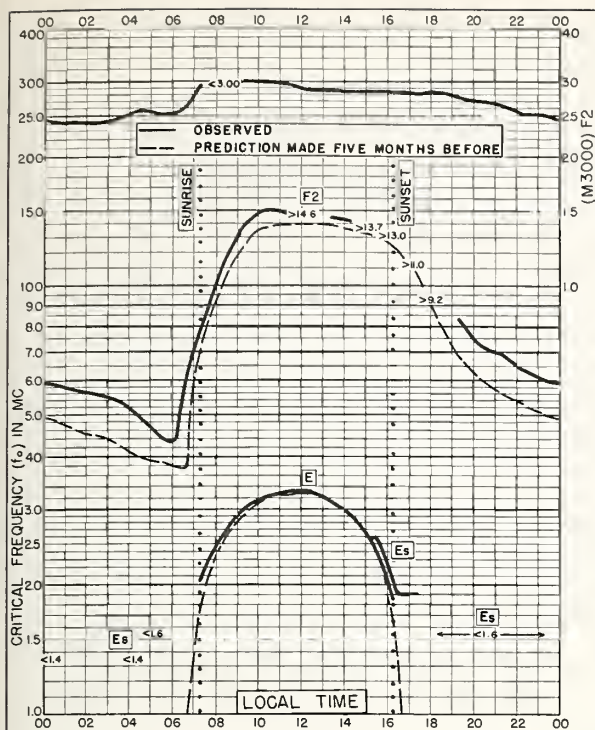


Fig. 97. DOORBES, BELGIUM

50.1°N, 4.6°E

NOVEMBER 1957

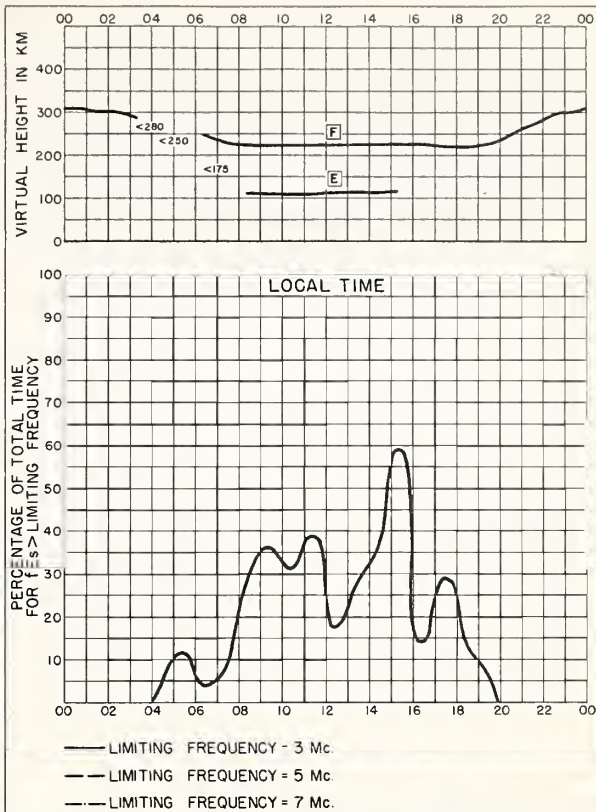


Fig. 98. DOORBES, BELGIUM

NOVEMBER 1957

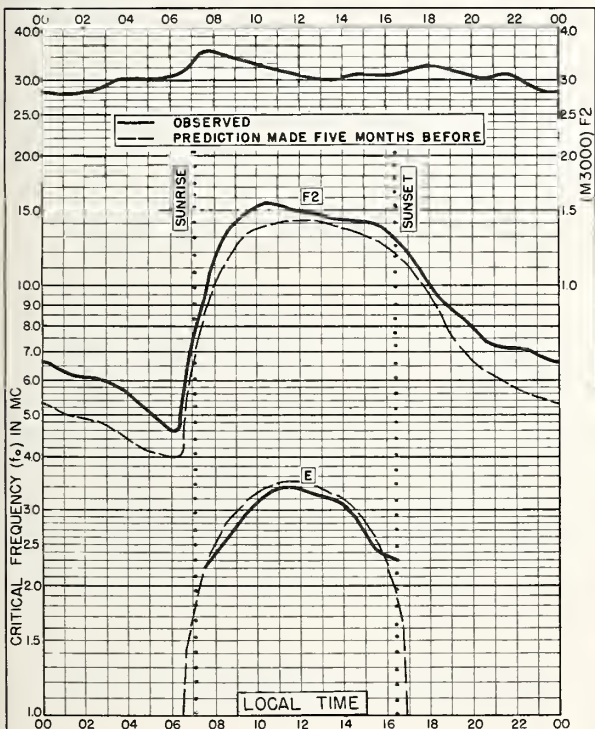


Fig. 99. SCHWARZENBURG, SWITZERLAND

46.8°N, 7.3°E

NOVEMBER 1957

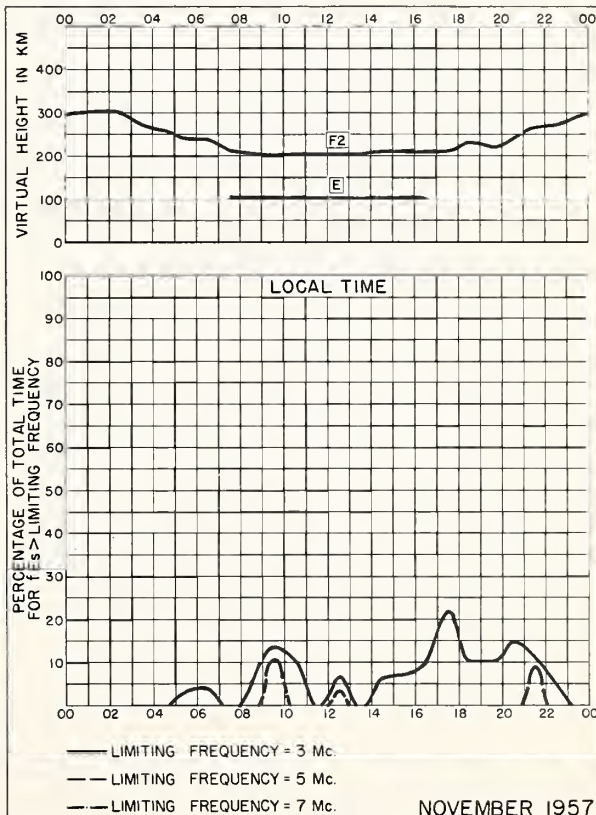


Fig. 100. SCHWARZENBURG, SWITZERLAND

NOVEMBER 1957

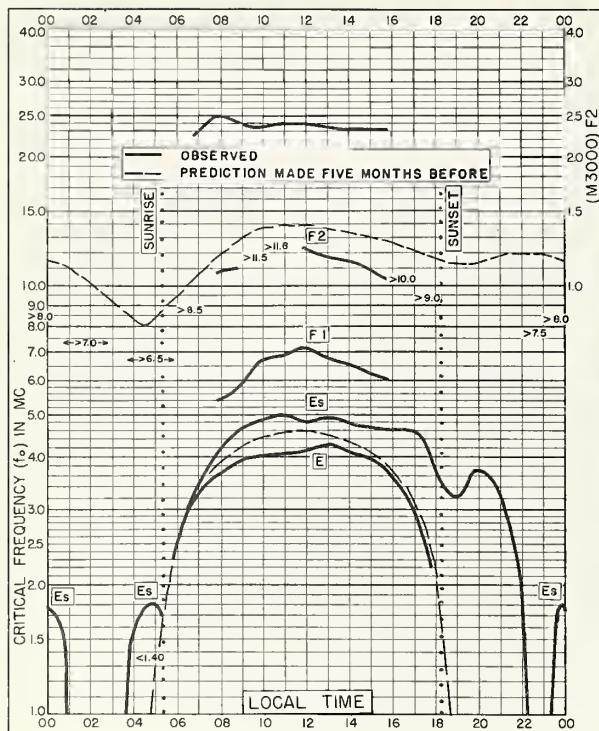


Fig. 101. TOWNSVILLE, AUSTRALIA
19.3°S, 146.7°E NOVEMBER 1957

Commercial Radio Station, Cebu.

NBS 503

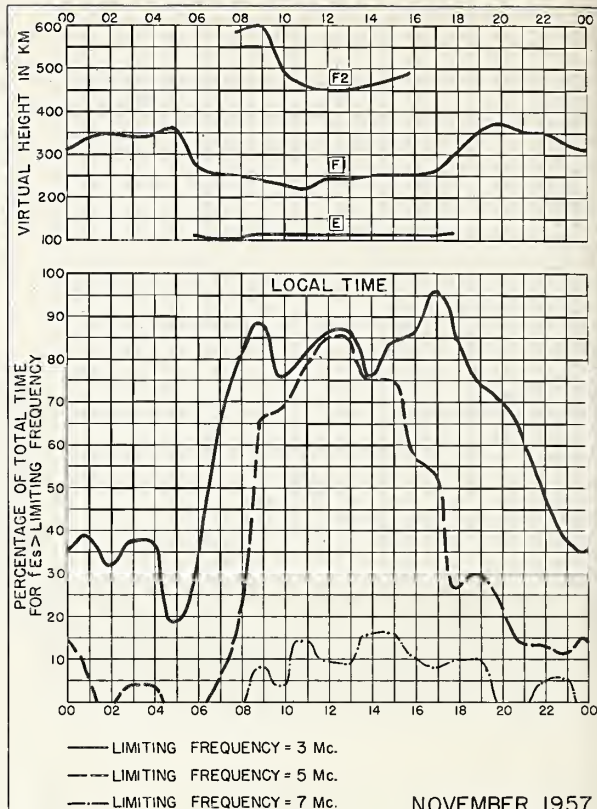


Fig. 102. TOWNSVILLE, AUSTRALIA NOVEMBER 1957

Commercial Radio Station, Cebu.

NBS 490

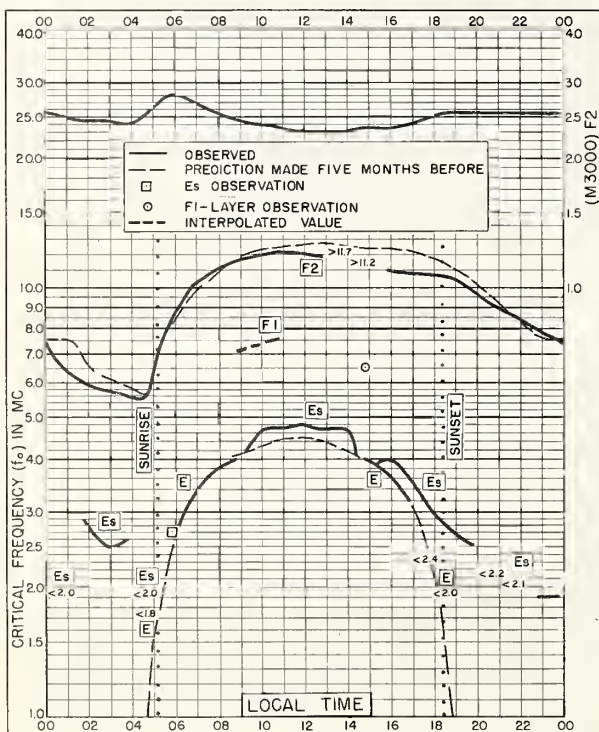


Fig. 103. JOHANNESBURG, UNION OF S. AFRICA
26.2°S, 28.0°E NOVEMBER 1957

Commercial Radio Station, Cebu.

NBS 503

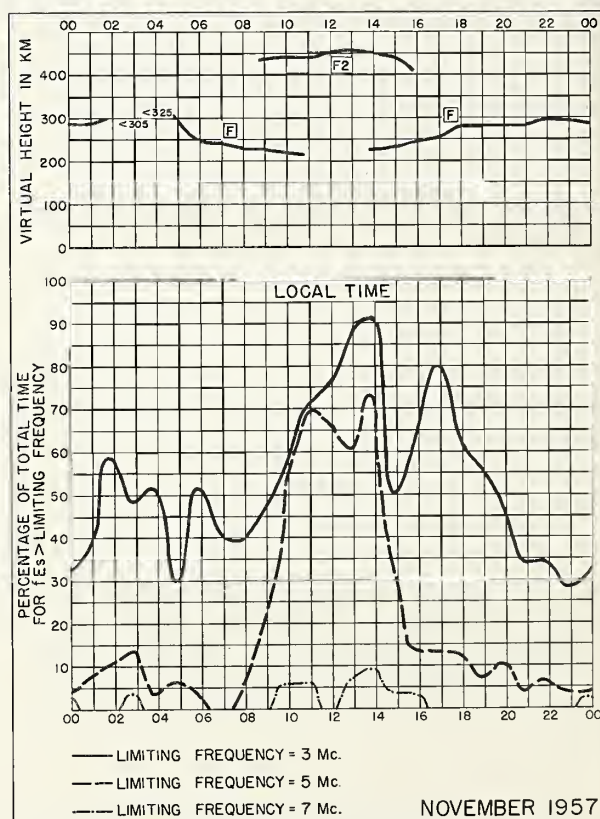
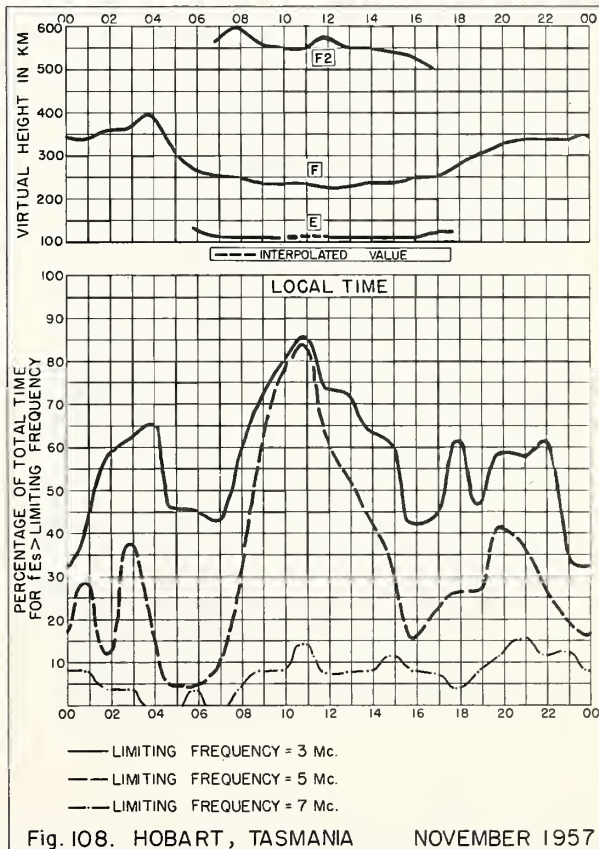
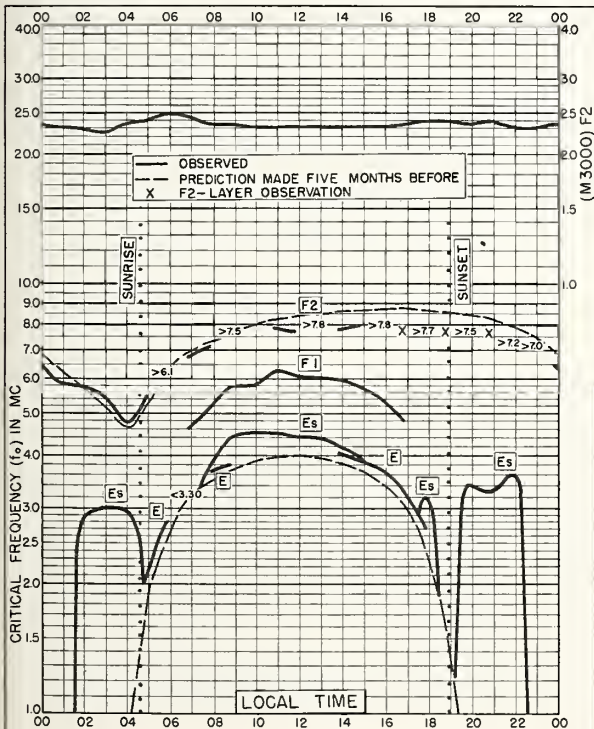
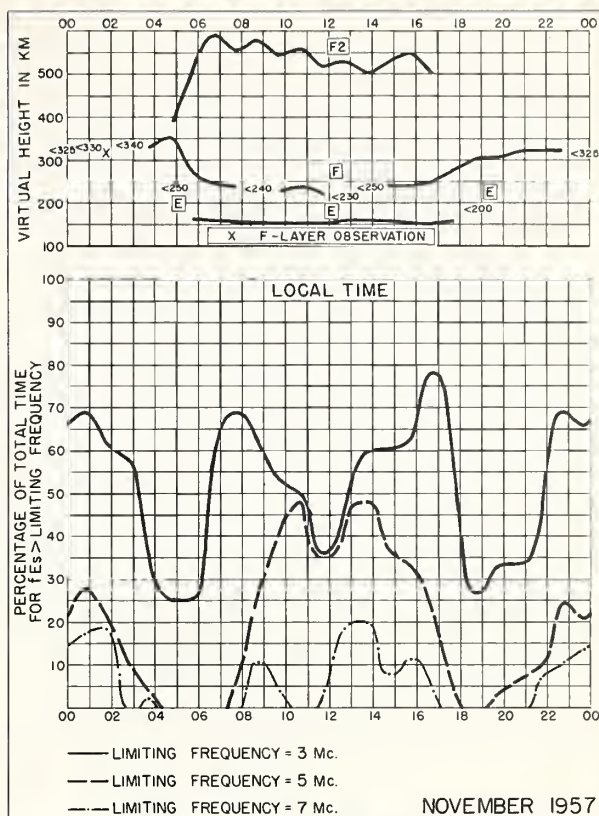
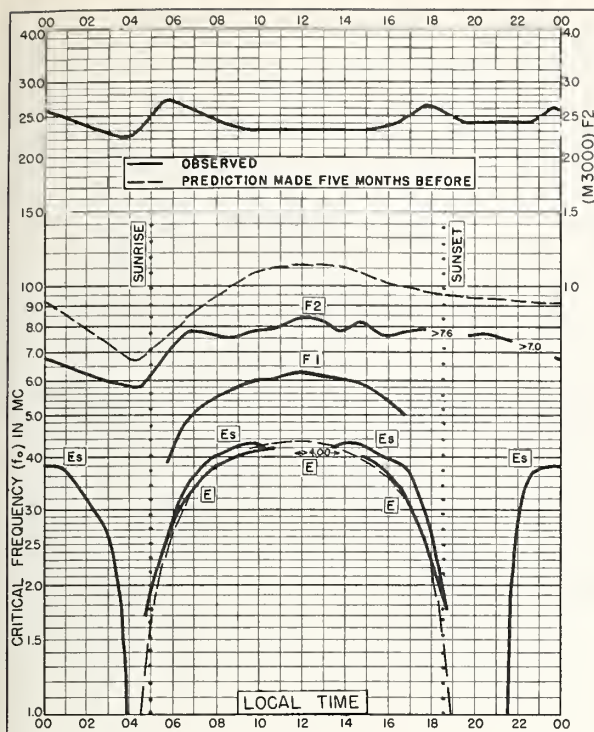


Fig. 104. JOHANNESBURG, UNION OF S. AFRICA NOVEMBER 1957

Commercial Radio Station, Cebu.

NBS 490



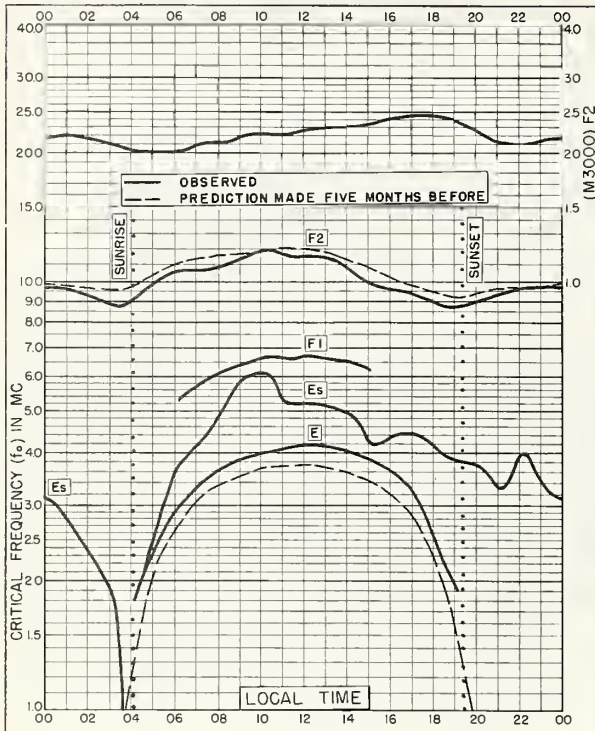


Fig. 109. FALKLAND IS.
51.7°S, 57.8°W NOVEMBER 1957

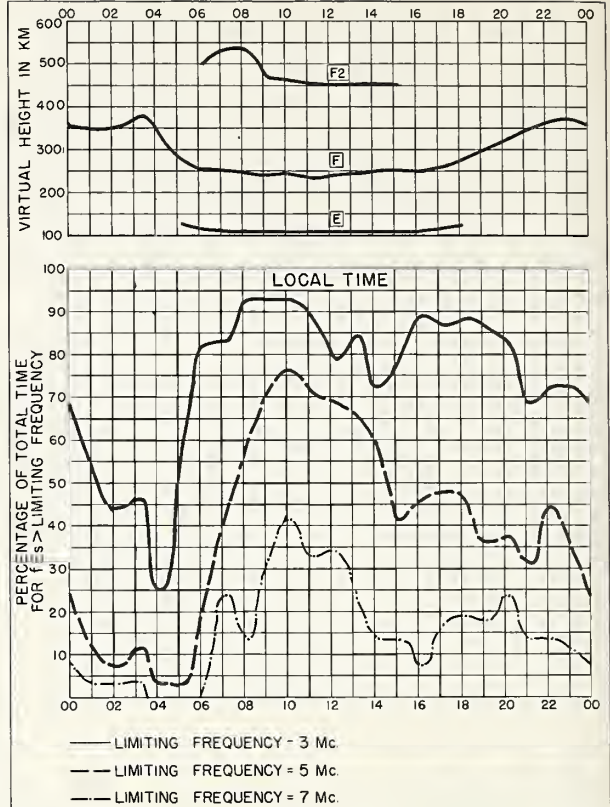


Fig. 110. FALKLAND IS. NOVEMBER 1957

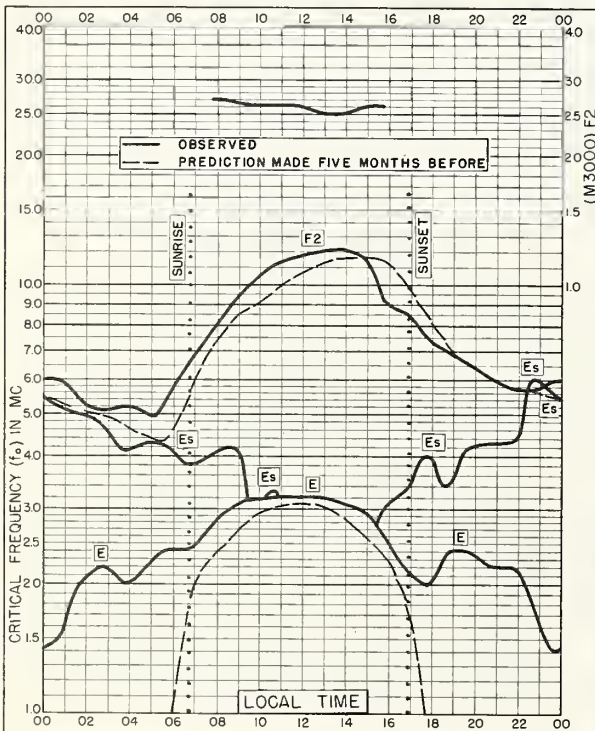


Fig. 111. CHURCHILL, CANADA
58.8°N, 94.2°W OCTOBER 1957

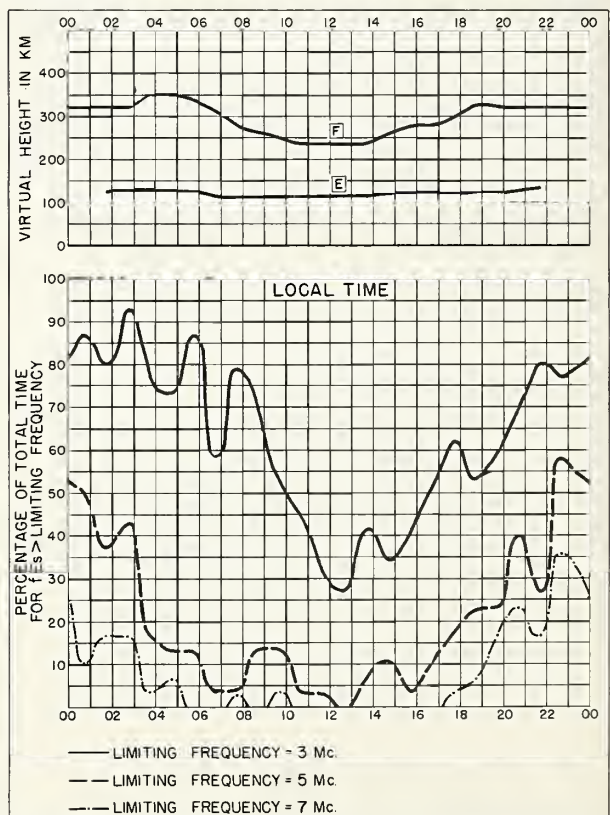


Fig. 112. CHURCHILL, CANADA OCTOBER 1957

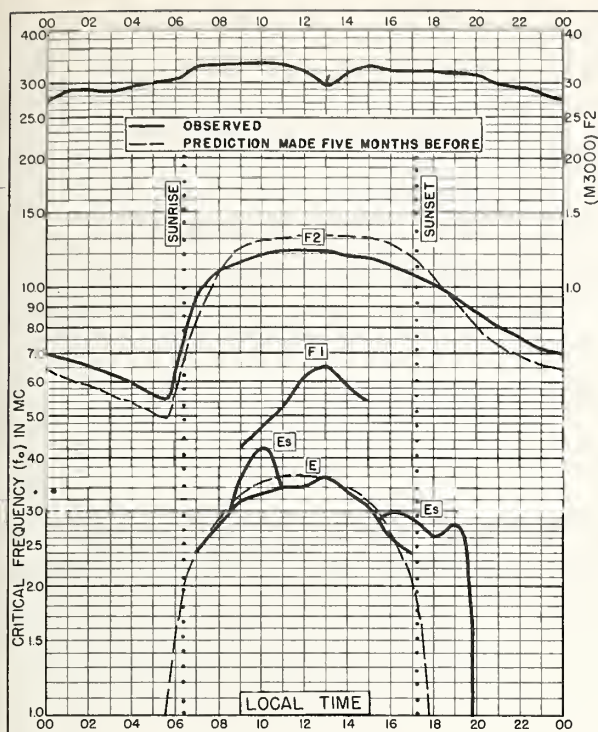


Fig. 113. BUDAPEST, HUNGARY
47.4°N, 19.2°E

OCTOBER 1957

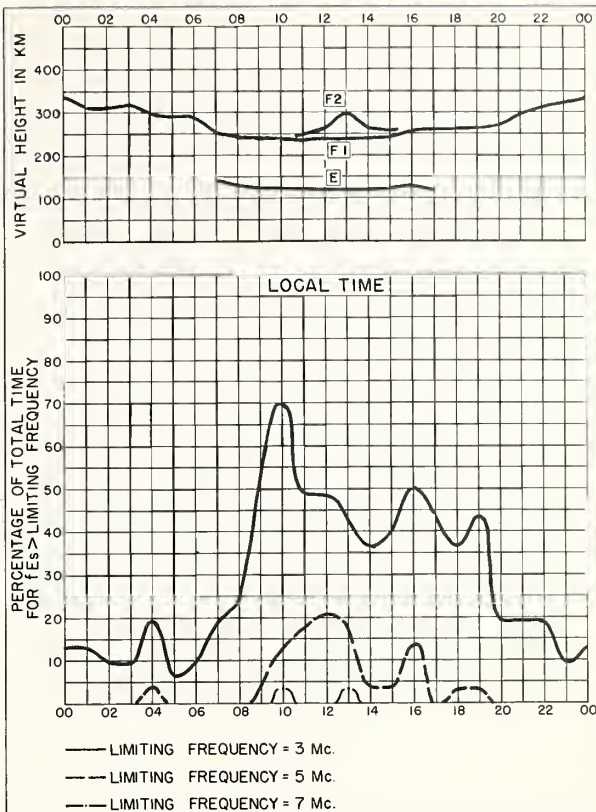


Fig. 114. BUDAPEST, HUNGARY

OCTOBER 1957

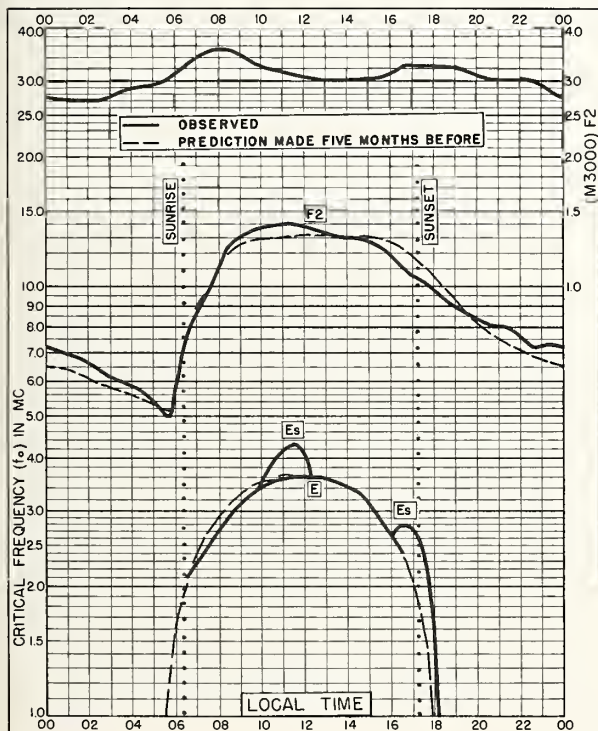


Fig. 115. SCHWARZENBURG, SWITZERLAND
46.8°N, 7.3°E

OCTOBER 1957

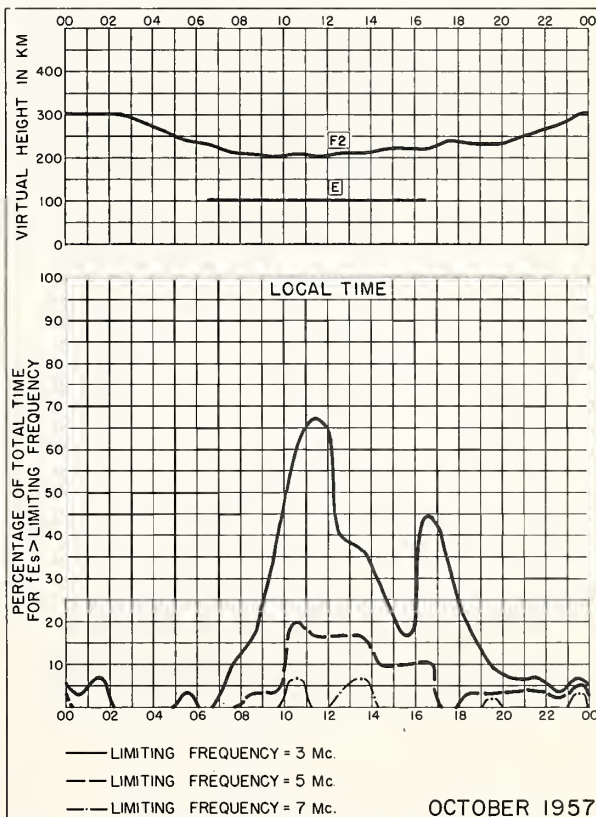


Fig. 116. SCHWARZENBURG, SWITZERLAND

OCTOBER 1957

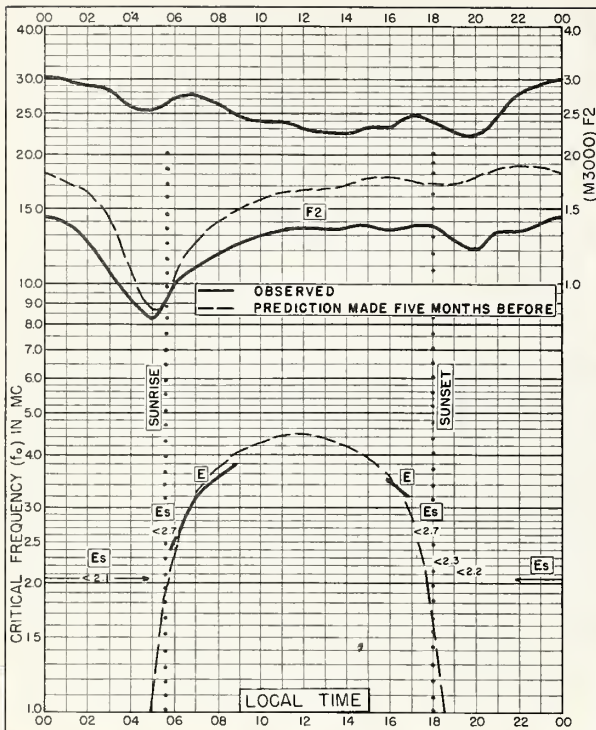


Fig. 117. SAO PAULO, BRAZIL
23.5°S, 46.5°W

OCTOBER 1957

NBS 503

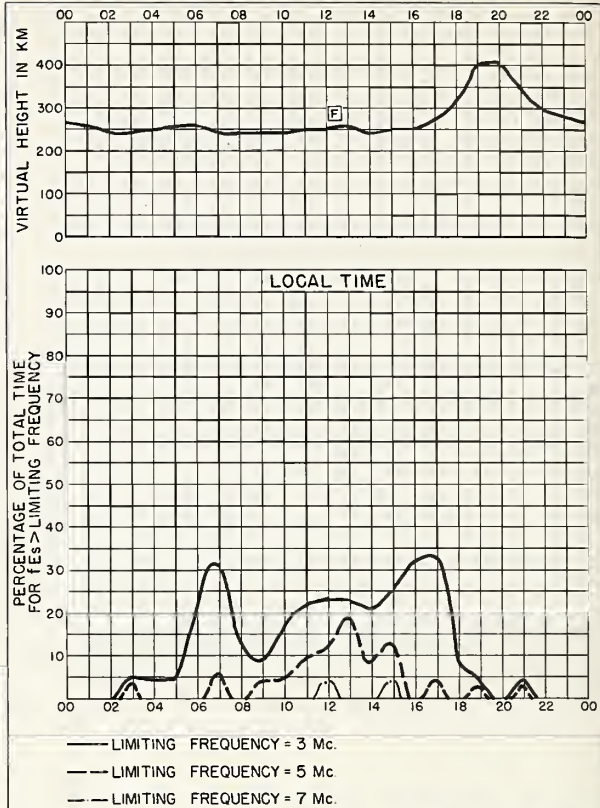


Fig. 118. SAO PAULO, BRAZIL

OCTOBER 1957

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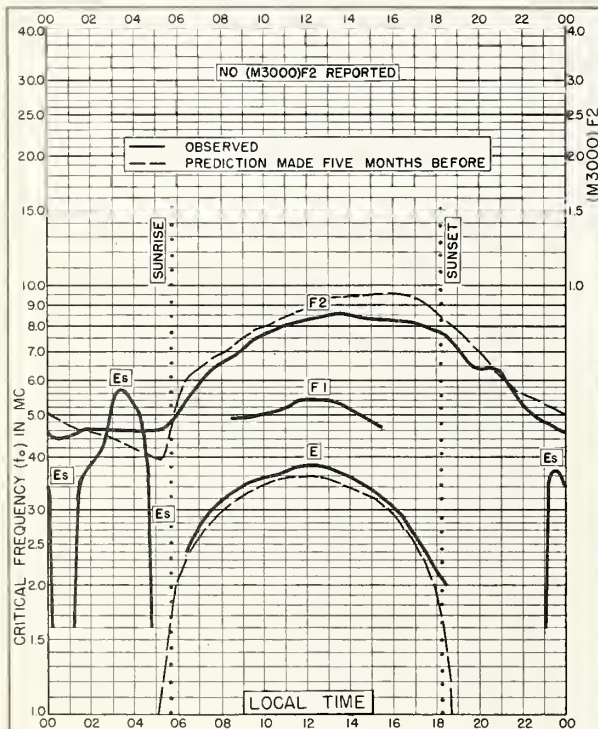


Fig. 119. MEENOOK, CANADA
54.6°N, 113.3°W

SEPTEMBER 1957

NBS 503

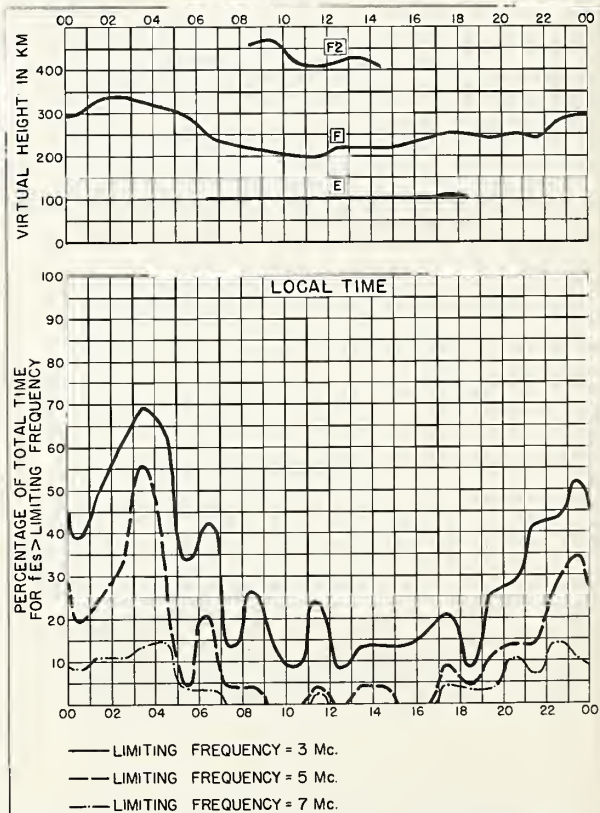


Fig. 120. MEENOOK, CANADA

SEPTEMBER 1957

NBS 490

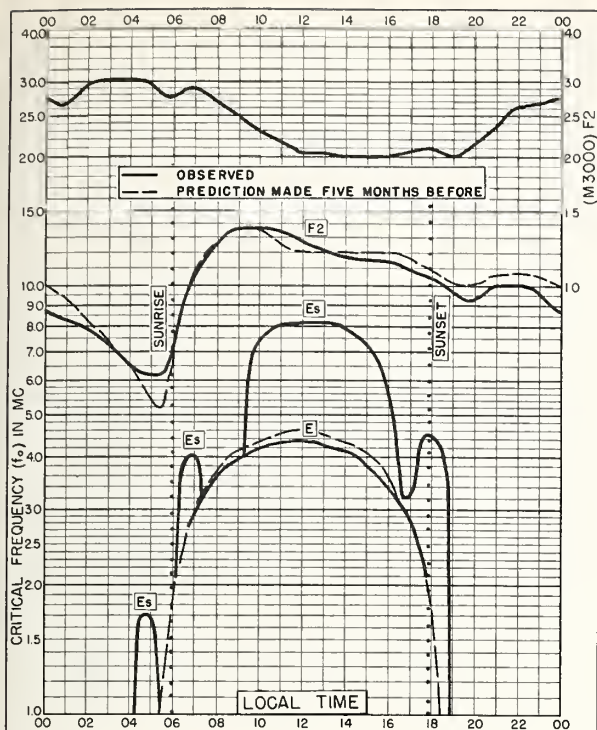


Fig. 121. CHIMBOTE, PERU

9.1°S, 78.6°W

SEPTEMBER 1957

Comma-Standard-Pedler, Colo.

NBS 503

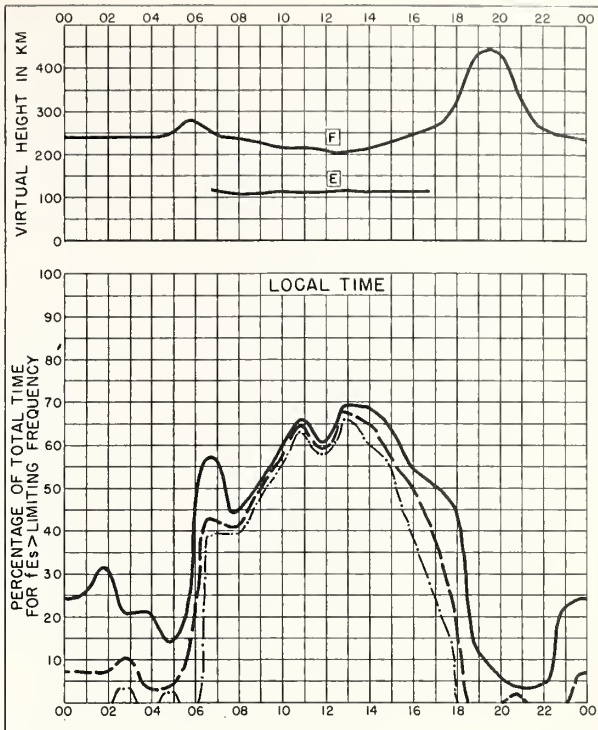


Fig. 122. CHIMBOTE, PERU

SEPTEMBER 1957

Comma-Standard-Pedler, Colo.

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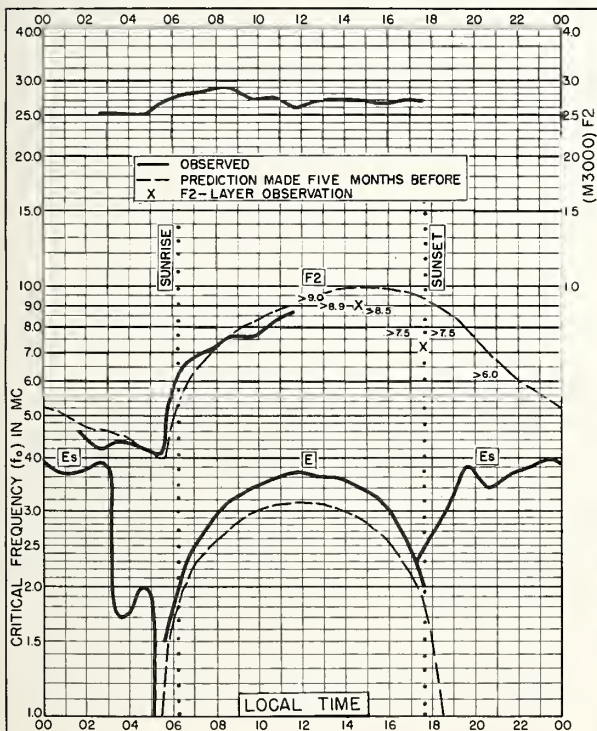


Fig. 123. MACQUARIE I.

54.5°S, 159.0°E

SEPTEMBER 1957

Comma-Standard-Pedler, Colo.

NBS 503

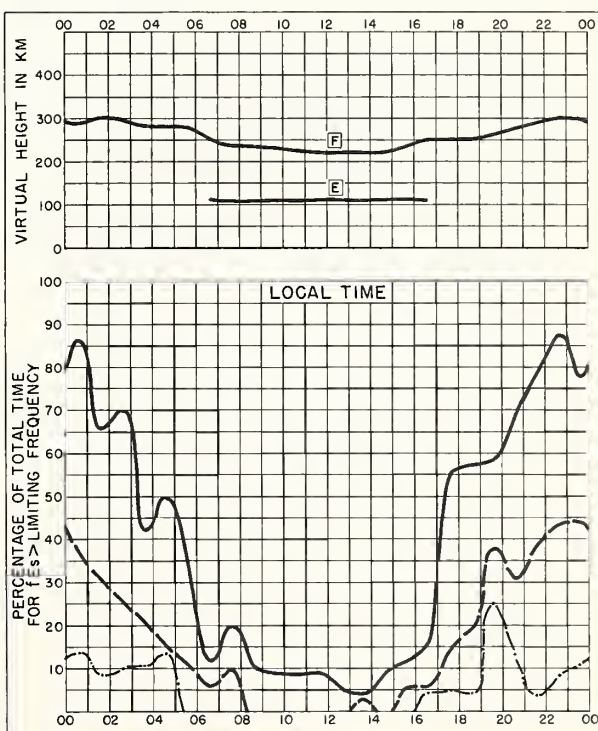


Fig. 124. MACQUARIE I.

SEPTEMBER 1957

Comma-Standard-Pedler, Colo.

NBS 490

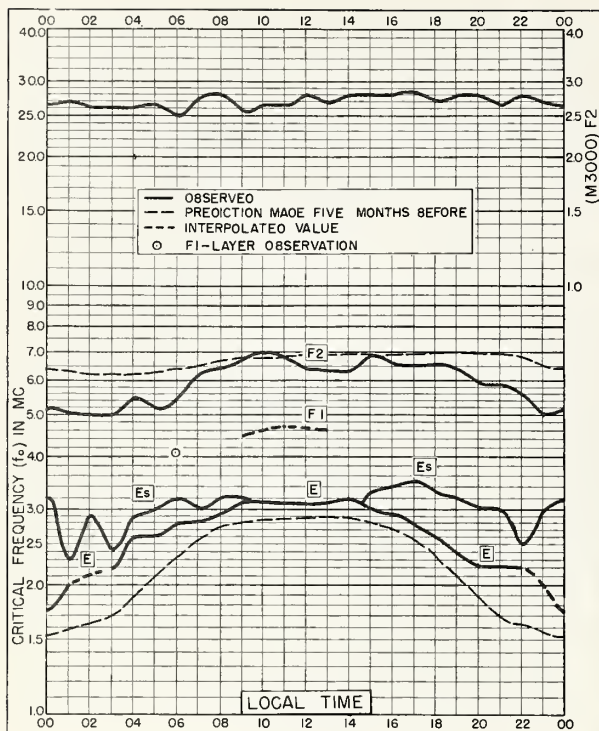


Fig. 125. SVALBARD, NORWAY
78.2°N, 15.7°E

AUGUST 1957

NBS 503

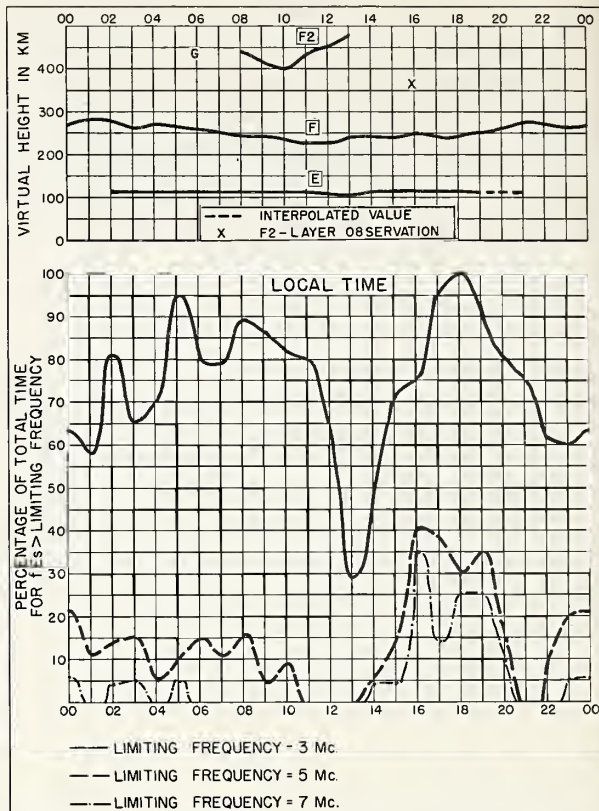


Fig. 126. SVALBARD, NORWAY

AUGUST 1957

NBS 490

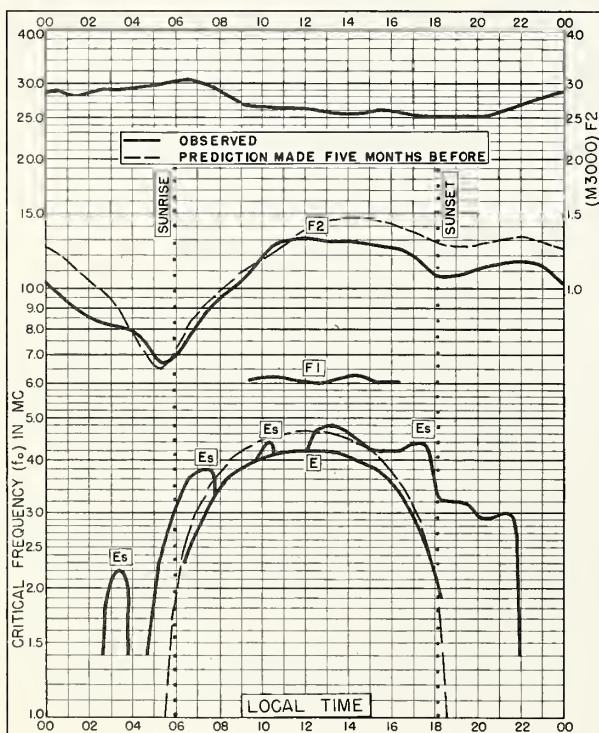


Fig. 127. PARAMARIBO, SURINAM
5.8°N, 55.2°W

AUGUST 1957

NBS 503

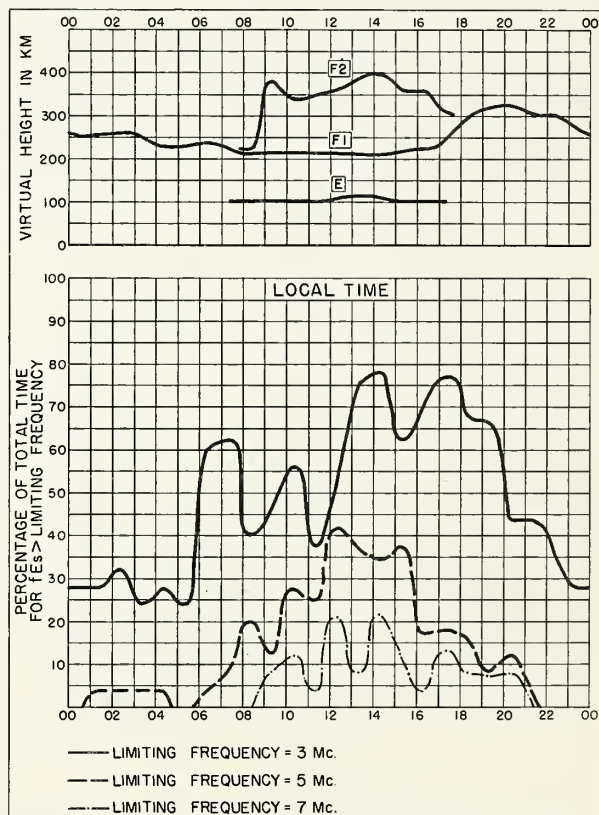


Fig. 128. PARAMARIBO, SURINAM

AUGUST 1957

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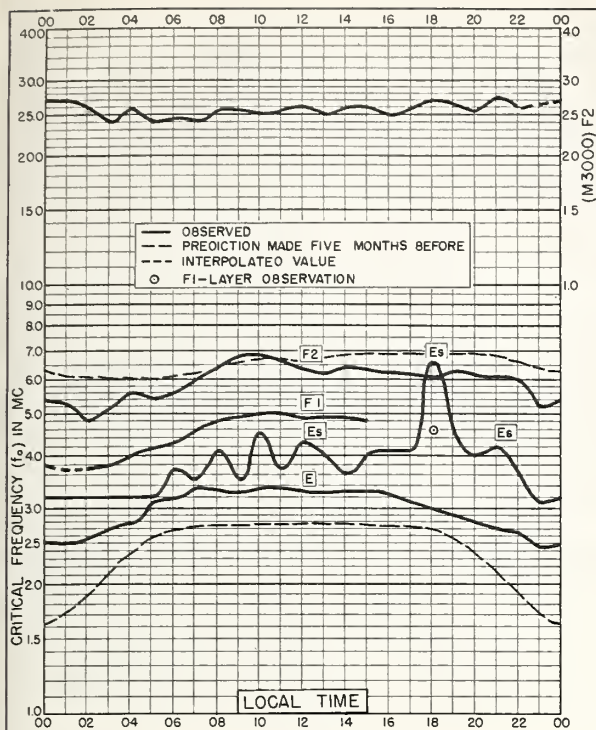


Fig. 129. SVALBARD, NORWAY
78.2°N, 15.7°E

JULY 1957

NBS 503

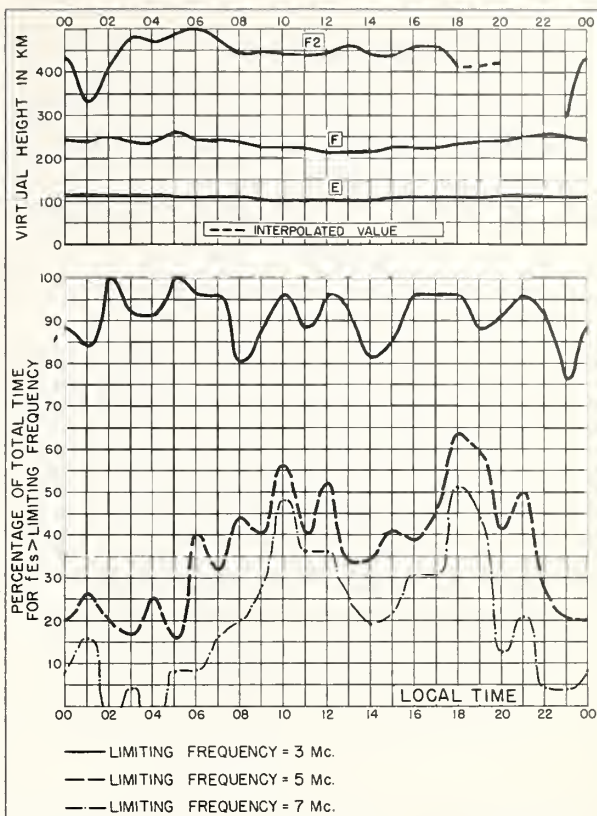


Fig. 130. SVALBARD, NORWAY

JULY 1957

NBS 490

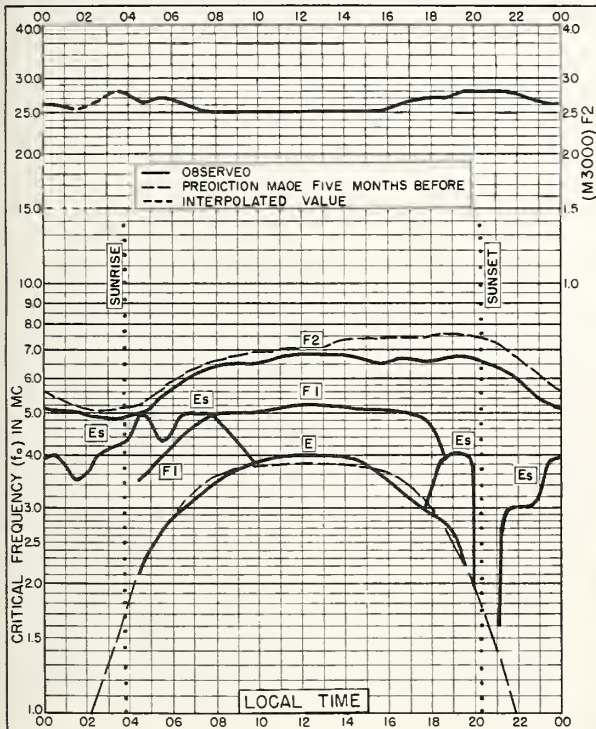


Fig. 131. MEENOOK, CANADA
54.6°N, 113.3°W

JULY 1957

NBS 503

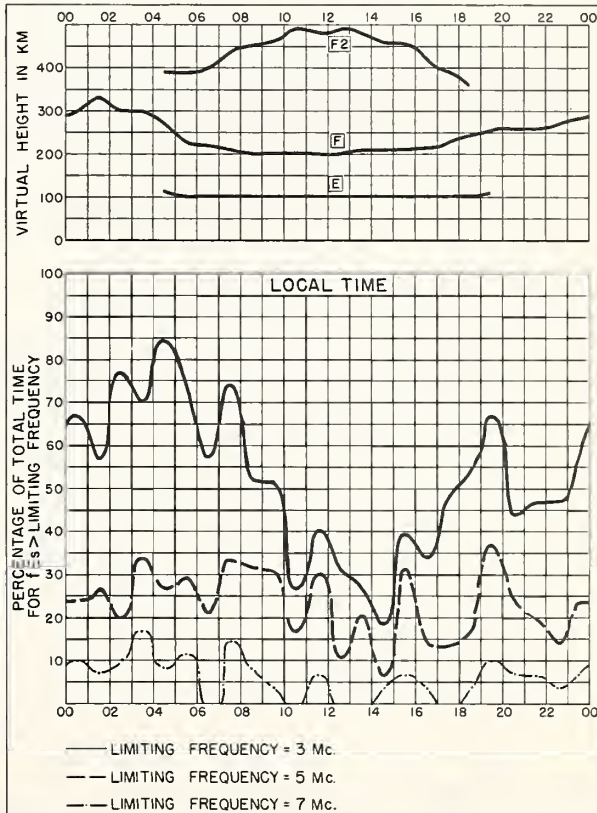


Fig. 132. MEENOOK, CANADA

JULY 1957

NBS 490

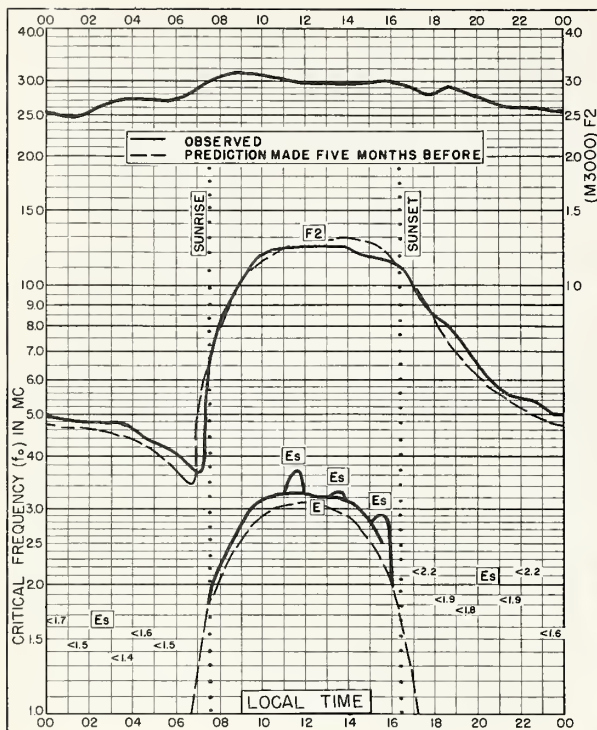


Fig. 133. CHRISTCHURCH, NEW ZEALAND
43.6°S, 172.8°E
JUNE 1957

NBS 503

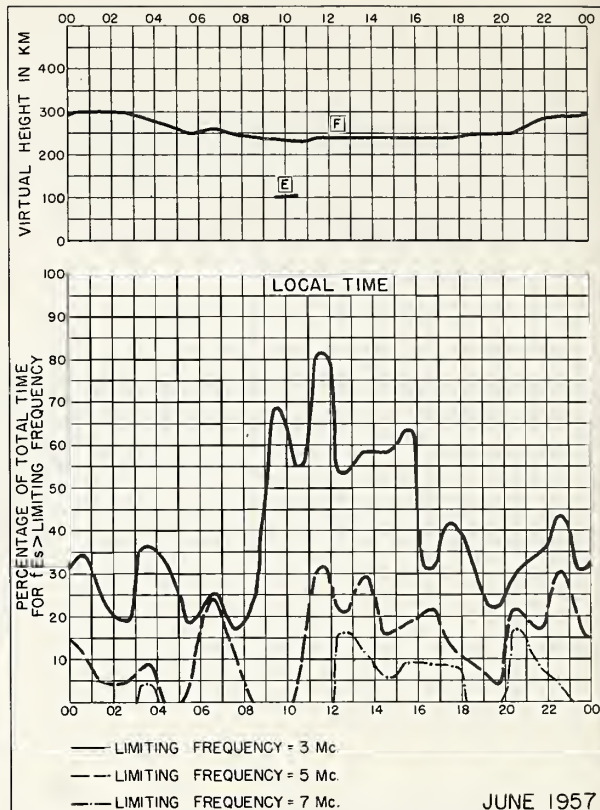


Fig. 134. CHRISTCHURCH, NEW ZEALAND

NBS 490

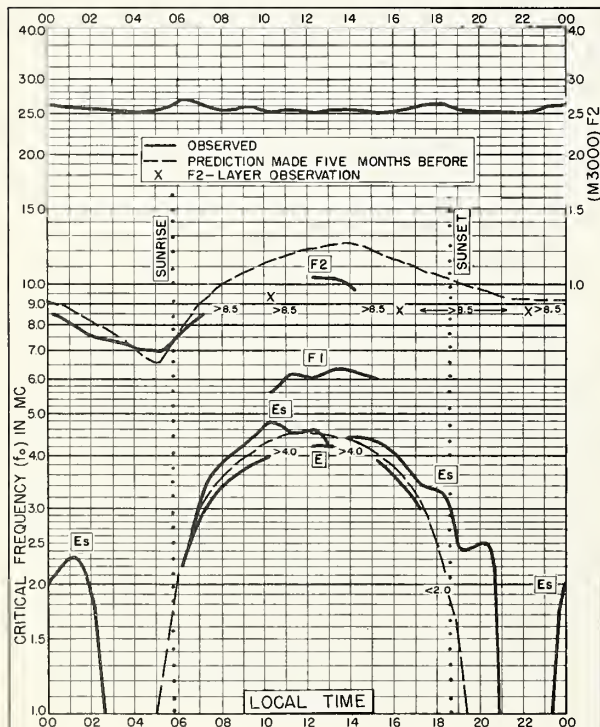


Fig. 135. BRISBANE, AUSTRALIA
27.5°S, 152.9°E
FEBRUARY 1957

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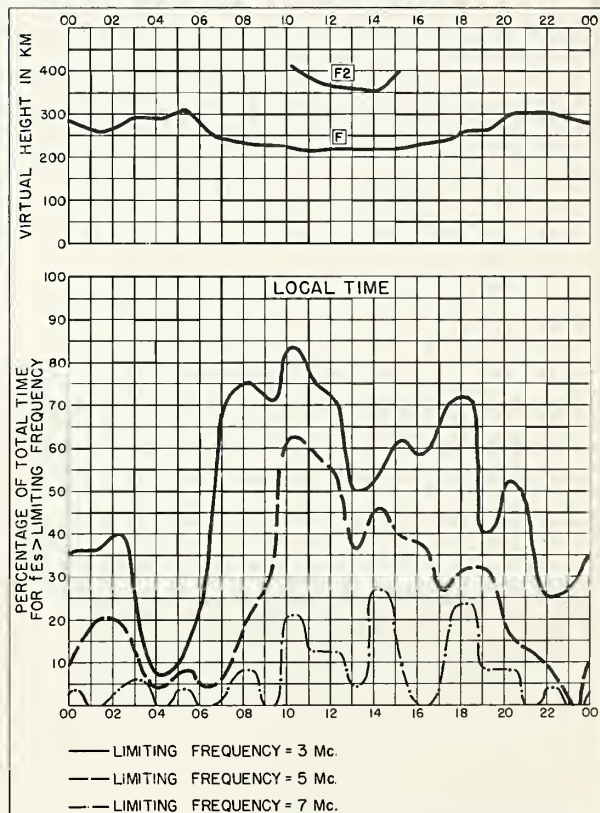


Fig. 136. BRISBANE, AUSTRALIA
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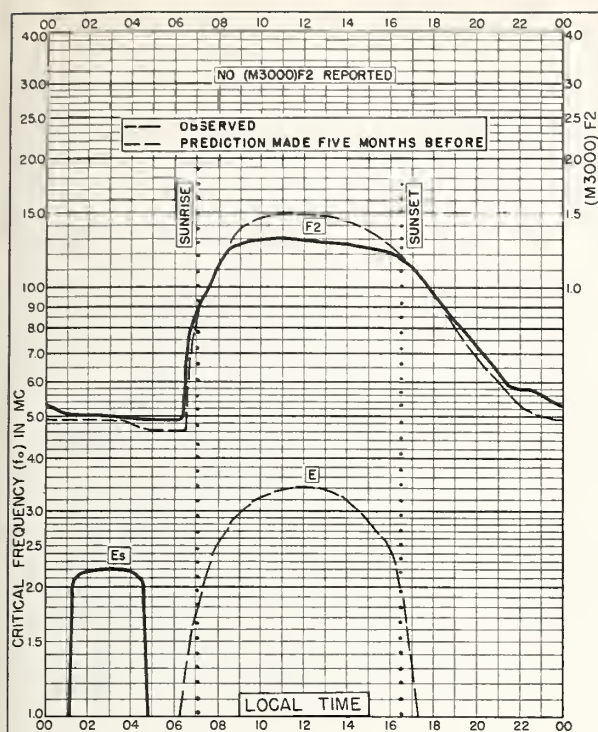


Fig. 137. WAKKANAI, JAPAN
45.4°N, 141.7°E

NOVEMBER 1956

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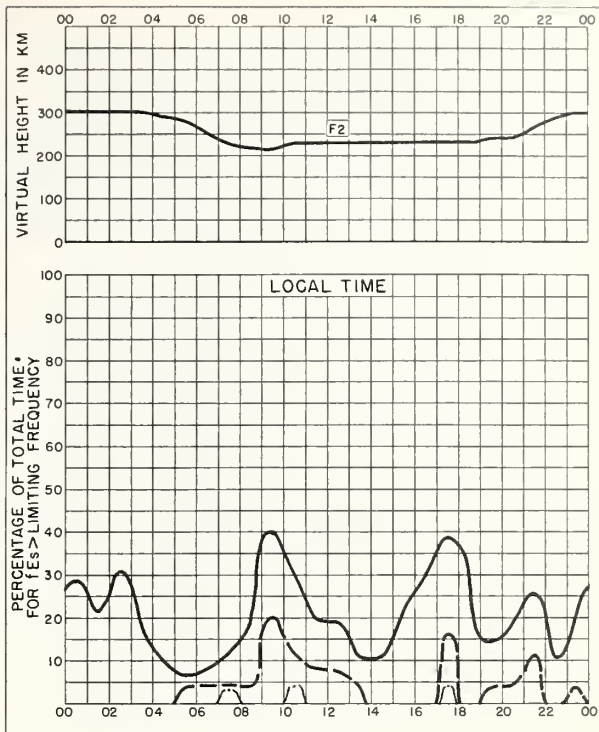


Fig. 138. WAKKANAI, JAPAN

NOVEMBER 1956

NBS 490

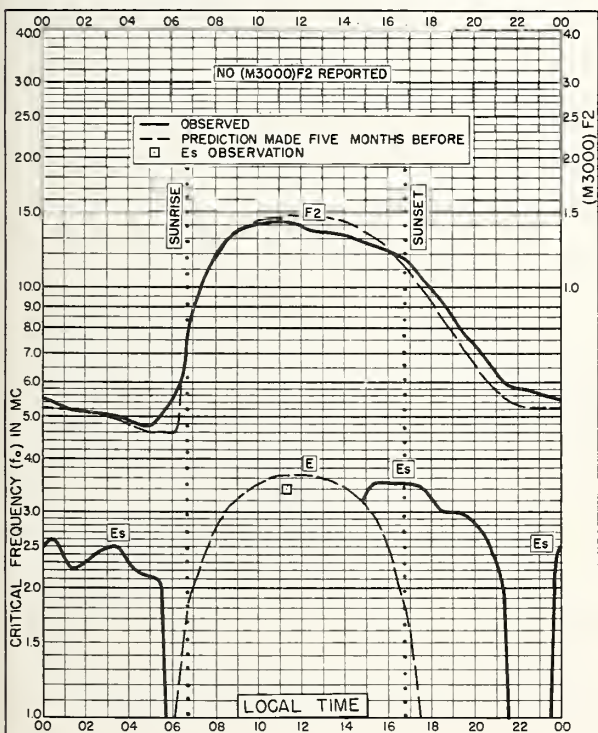


Fig. 139. AKITA, JAPAN
39.7°N, 140.1°E

NOVEMBER 1956

NBS 503

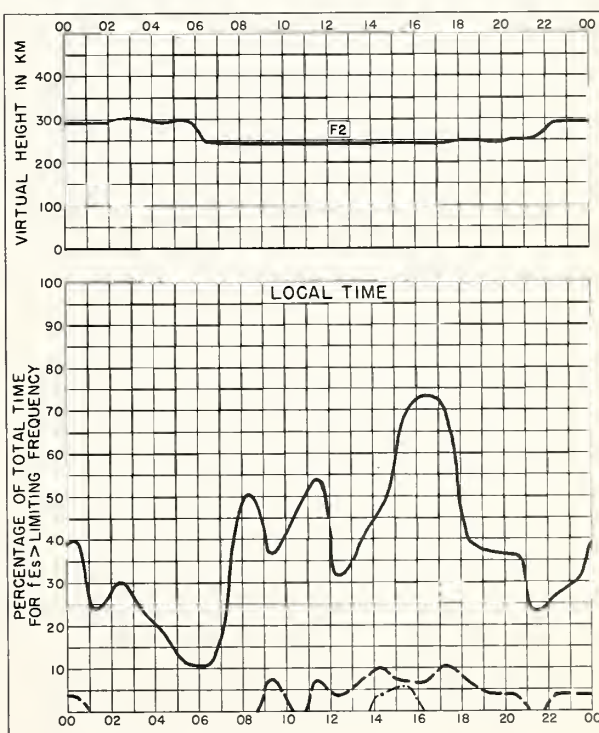


Fig. 140. AKITA, JAPAN

NOVEMBER 1956

NBS 490

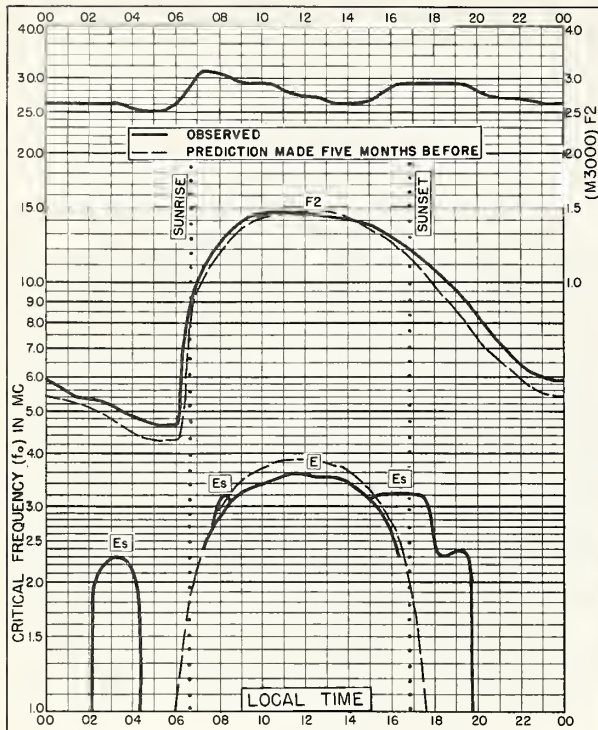


Fig. 141. TOKYO, JAPAN
35.7°N, 139.5°E

NOVEMBER 1956

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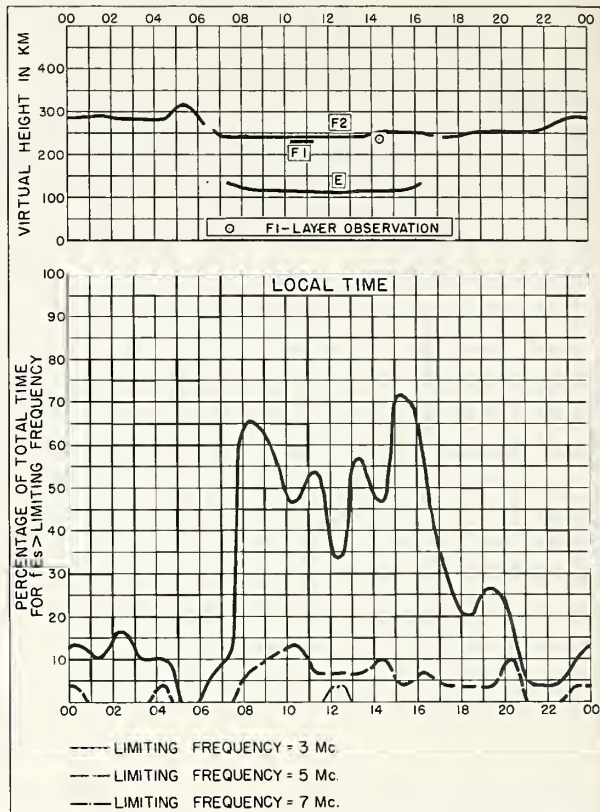


Fig. 142. TOKYO, JAPAN

NOVEMBER 1956

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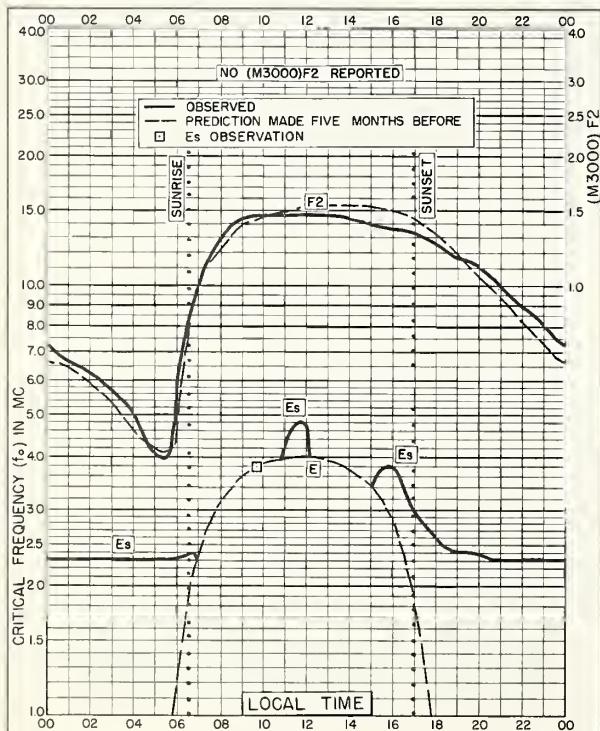


Fig. 143. YAMAGAWA, JAPAN
31.2°N, 130.6°E

NOVEMBER 1956

NBS 503

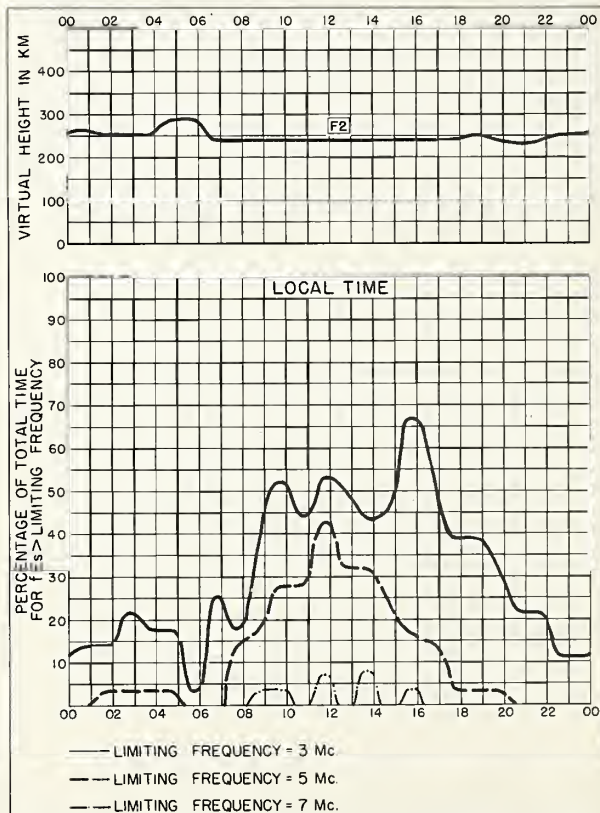


Fig. 144. YAMAGAWA, JAPAN

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[A detailed list of CRPL publications is available from the Central Radio Propagation Laboratory upon request]

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CRPL—Jp. North Pacific Radio Propagation Forecast (of days most likely to be disturbed during following month).

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CRPL—F. (Part A). Ionospheric Data.
(Part B). Solar-Geophysical Data.

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